City of Riverside

CITY OF
RIVERSIDE

City of Arts & Innovation

Information Technology
2012-2014 Strategic Plan

Aligning with departments to enhance citizen services

INFORMATION TECHNOLOGY STRATEGIC PLAN
Aligning with departments to enhance citizen services

2012-2014

The City of Riverside is a High Technology City

Digital Cities Survey recognizes cities that are using technology to create a seamless environment between local government and constituents. Riverside has ranked top ten U.S. for the past five years in a row.

The Center for Digital Government has ranked Riverside as having one of the top 10 best websites in the nation for the past six years in a row.

The Intelligent Community Forum has recognized Riverside as one of the top 21 most intelligent communities in the world for the fourth straight year and TOP 7 in 2011 and 2012.

The Municipal Information Systems Association of California has recognized Riverside with their outstanding information technology practices award for the past five years in a row.

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Executive Summary

The City of Arts & Innovation

Introduction

Technology is playing an ever-increasing role in helping the City of Riverside deliver services. It is enabling increased productivity, around the clock operation, and improved relationships with residents, businesses, organizations and visitors.

One of the primary roles of the Information Technology (IT) Department is to guide the use of technology for the City. IT listens to the business and operational needs of departments and makes recommendations that fit into a common framework that will benefit the whole.

The City vision is to be the economic, cultural and technology center of the Inland Empire. To do this City leaders have invested $1.6 billion to modernize Riverside. They realize and are communicating that to achieve their vision the City must leverage technology everywhere. In 2004, the City sponsored a high technology task force of Riverside's business and community leaders to help identify actions the City could take to attract businesses and professionals to Riverside.

The taskforce recommended eight actions and emphasized the importance of the City setting an example in its use of technology and becoming the high technology center of this region. As a result of the taskforce, the City hired its first Chief Information Officer (CIO). The CIO has embarked on ten initiatives to create a modern Information Technology (IT) environment and align IT with City departments to enhance citizen services, create a "24-hour City Hall", and pursue City goals.

This IT Strategic Plan outlines how IT will align with City Departments to help achieve City goals and deliver services for the Riverside community.

Top Row (Left to Right)
Rusty Bailey (Ward 3)
Mike Gardner (Ward 1)
Mayor Ron Loveridge
Paul Davis (Ward 4)
Chris MacArthur (Ward 5)

Bottom Row (Left to Right)
Steve Adams (Ward 7)
Nancy Hart (Ward 6)
Andy Melendrez (Ward 2)

The City Council's Strategic Goals and Budget Priorities:

- Economic Development: A strong innovative economy
- Growth and Annexation: Intelligent growth to continuously improve our quality of life
- Transportation: Gateway to the U.S. and World and California destination of choice
- Livable Communities and Neighborhoods: A city of the future with deep historical roots

Riverside seeks to enhance its position as the economic and cultural center of the Inland Empire and one of the best places to live and work in the U.S.

Scott Barber, City Manager

The City is laser focused on Economic Development. Riverside is a unified city that is growing intelligently, incenting innovation and enhancing its reputation as a location of choice. It has become one of the most intelligent communities in the world with citywide broadband connectivity, digital inclusion for all, technology driven education, a growing knowledge workforce, innovative government, education and business services, and marketing and advocacy using social media technologies.

High Technology is a necessary and important component to the economic future of our City and to create that future, Riverside is anchoring its place as the high technology capital of Inland Southern California.

Ron Loveridge, Mayor and Chairman of SmartRiverside

The City of Riverside is evolving as a high technology community. We have over 50,000 college students and a growing number of organizations that are using computer-based solutions in creative new ways and leading the way to our future. As the chairman of SmartRiverside, my goals are to continue to attract and develop high technology companies in the City of Riverside, build a smarter Riverside through City-wide free wireless Internet access, increase the technology literacy of Riverside through Digital Inclusion, and to identify new programs that foster technology innovation and use in Riverside.

The CEO Forums' High Technology Task Force

In February 2004, CEOs of high technology companies headquartered in Riverside created the High Technology Taskforce. This independent group of high technology experts and practitioners was formed to make recommendations for city action to improve high technology economic development. The task force included City, University, and Community leaders as well as CEOs from Riverside's High Technology Companies.

Recommendations included:

1. Promote Local High Technology Development
2. Attract New and Support Existing Riverside Businesses
3. Assure Advanced Internet Access for Business and Citizens
4. Assure City's Strategic Use of Technology
5. Stimulate Technology Transfer and Entrepreneurship
6. Promote Riverside as a Center for High Technology
7. Orient Policies, Codes and Ordinances around High Technology
8. Attract and Retain a Professional Workforce

Riverside Technology CEO Forum

In 2008, the Riverside Technology CEO Forum (RTCF) revisited the HTTF initiatives, re-examined Riverside's competitive advantages, and recommended new focus on global competition, embracing technology businesses to also bring growth to traditional industry sectors (including retail, entertainment and hospitality businesses), and charting a clear path to sustainable economic growth through strategic use of technology and innovation.

Strategic Recommendations Included:

1. Prioritize Sectors for Economic Development (IT, communications, renewable energy, biotech & medical technologies, and water & transportation infrastructure)
2. Nurture Local Technology Businesses
3. Create New Technology Businesses
4. Capitalize on the Local Talent Pool
5. Technology Businesses and City Hall:
6. Explore City Hall Technology Enhancements
7. Create a "Tech City Think Tank"
8. Engage Local Educational Institutions
9. Build Tech City Infrastructure

In 2009 the City Council branded Riverside as the "City of Arts and Innovation", in 2010 approved "Seizing our Destiny, The agenda for Riverside's Innovative Future" as the City's strategic plan and roadmap to the future, and from 2009 through 2012 (four years in a row) Riverside has been recognized as one of the most Intelligent Communities in the World.

Steve Reneker, CIO and Executive Director of SmartRiverside

Over the past six years we have become a High Technology City. Thanks to the foresight of our executive team we now have a robust and secure "state-of-the-art" enterprise datacenter; internet connectivity throughout the City; a team of highly skilled professionals; and our residents, businesses, community organizations and visitors have access to a "24 Hour City Hall" with services that are among the finest offered anywhere in the U.S.

Everyone in IT is tasked with pursuing excellence in all activities, being highly responsive, partnering with departments to help them leverage technology in delivering world class services, and being enterprise driven in order to provide high value, low cost integrated solutions for the City.
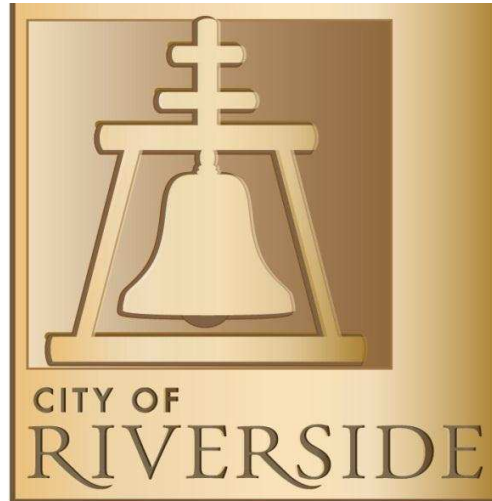
Ten Strategic Initiatives form the framework for priorities we set, decisions we make and projects we pursue. These initiatives (detailed in Section 5) include commitment to green computing, wireless communications, security, centralization and consolidation, integration, standards, infrastructure, e-government, digital inclusion and operational efficiency.

Our City is embracing technology at a rapid pace as we pursue our goals of enhancing Riverside's stature as the economic, cultural and high tech center of the Inland Empire. Some of the exciting projects we are pursuing include:

- Wireless connectivity everywhere in our City
- Free refurbished computers with wireless access for all low-income families
- Video Security in our parks, intersections, facilities and throughout the City
- The best Graffiti Abatement solution in the U.S.
- In-car video and wireless mobile data computers in 135 police patrol vehicles
- A modern Emergency Operations and Disaster Recovery Center
- An advanced smartphone enabled 311 Customer Relationship System
- A Reverse 911 System to notify citizens about power outages and emergencies
- An advanced Traffic Management Center to view and free up bottlenecks real-time
- An Energy Management System to deliver some of the lowest utility rates in our State
- An enterprise GIS solution with layers of City assets and a master address database to help our Fire Department track and respond to emergencies
- A map-based property system to locate information, WiFi access points and orthophotography of all City property
- High Definition Digital Technology in City facilities for council broadcasting, activity viewing, presenting information, demonstrating solutions and training employees
- Enhanced on-line benefits self-service for City employees
- Payments, special event permitting and other on-line self-service applications for citizens

In this IT strategic plan you will find more information about our services, our best in industry project management and departmental alignment methodology, our standards and architectures, our major initiatives, projects we are pursuing with City departments and actions we are taking in pursuit of our City's vision for the future.

City of Arts & Innovation

Mission, Vision, and Guiding Principles

Working Together with the Same Goals in Mind

Section 2 – Mission, Vision, and Principles

Aligning with departments to enhance citizen services

The IT Department is committed to providing services and performing responsibilities in accordance with guiding principles and City of Riverside Core values

The Information Technology (IT) Department's primary purpose is to help departments improve service delivery. Citizens and other stakeholders should benefit substantially from this strategic plan by realizing improved access to services, information, and more convenience in how they conduct business with the City. The IT Department's goal is to serve everyone in a fair and consistent manner using the strategies, values, guiding principles, policies and procedures set forth in this document.

2.1   IT Mission

The mission of the Information Technology Department is to work collaboratively with other departments and organizations to improve the quality of life in the City; achieve practical and reliable solutions to City problems, optimize processes through information technology leadership and professional services; and provide an exciting, challenging, and rewarding environment where staff members derive satisfaction from challenging assignments, continued professional growth, personal accomplishments, and the success of City of Riverside departments in meeting their operational and service objectives.

2.2   IT Vision

The City of Riverside Information Technology Department is committed to being a premier city government service provider. The Information Technology Department's vision is to:

- Provide highly skilled and motivated information technology professionals that share a commitment to excellence and quality customer service.
- Maintain a clear understanding of City department's business services.
- Assist in developing technical solutions that meet business needs.
- Ensure the capacity required to support current and future enterprise needs is available.
- Provide innovative solutions and process improvements using proven state-of-the-art technologies.
- Optimize the City's investment in technology to ensure targeted and efficient use of resources.
- Deploy technologies that protect individual privacy and provide adequate security to protect individual information as required by law.
- Maintain a technology infrastructure and processes to comprehensively manage, preserve, and share in electronic form, the extensive knowledge base of City departments.
- Identify and address emerging needs for City-wide solutions.
- Support and enhance the strategic IT competencies of the City Department's technology power users and business systems analysts.

2.3   IT Principles

Organizational Principles

#	Principle
1	The City's Executive Technology Committee and the IT Department will use a formal, collaborative process to review, approve and prioritize all major investments in information technology, systems, and applications.
2	The IT organization will provide technology guidance to City departments and establish enterprise standards on the use of technology.
3	The IT organization will support the business needs of the City departments.

Infrastructure Principles

#	Principle
1	The IT infrastructure will be based upon open systems concepts and single sign-on access to assure secure universal access and interoperability.
2	The IT infrastructure will be designed to take advantage of advances in technology.
3	The IT infrastructure will remain current on system enhancements and will be continuously upgraded to meet the City's performance and security needs.
4	The IT infrastructure will facilitate the sharing of hardware, software, and data resources.
5	The IT infrastructure will be designed in a manner that facilitates anytime/anywhere access to City systems and applications.

Data Principles

#	Principle
1	Data are assets that must be managed to the benefit of the City.
2	Data will be managed and maintained in accordance with the City's standards.
3	Data will be entered once as close to its source as possible.
4	Data will have a single steward, with a clearly defined logical location, and will be accessible to those who are authorized to view and/or use it.
5	Data will be shared in a manner that is consistent with security and confidentiality requirements established by the City's Executive Technology Committee, and in accordance with state and federal laws.

Application Principles

#	Principle
1	Commercial off-the-shelf (COTS) and/or government off-the-shelf (GOTS) applications will be acquired whenever possible, rather than developed in-house.
2	Applications will use standard web and Graphical User Interfaces (GUIs) and will be supported with vendor provided support services, documentation and user training.
3	Applications will be selected and prioritized with the active participation and collaboration of departmental users and subject matter experts and within City standards.
4	Applications will be selected based on their long-term viability and low-cost maintenance.
5	Applications will be selected for ease of interoperability with other City services.
6	New and existing spatial data sets will be designed, cataloged, and described in a comprehensive and standard way utilizing ArcGIS technology from the Environmental Systems Research Institute (ESRI).
7	Cloud solutions will only be considered where cost effective and where redundancy exists to maximize system reliability.

2.4   City of Riverside Core Values

Integrity and Credibility: We seek to earn the public's trust and the trust of our member departments.

Commitment to Service and Action: We put our customers first. We facilitate, enable and problem solve. We communicate regularly with our customers to determine their satisfaction with our performance.

Accountability: We establish measurable performance goals and recognize achievement. We define and assign responsibility and authority and hold ourselves accountable for results.

Inclusiveness and Diversity: We appreciate the uniqueness of each individual. We treat each person within the organization and the larger community with respect and dignity.

Loyalty: We identify ourselves with pride as part of the City of Riverside. As City representatives, we commit ourselves to advancing the goals of the entire City organization.

Personal Growth: We believe Riverside employees want to excel and will create a learning environment that maximizes the potential of each person.

Innovation: We are creative in meeting the community's changing needs and preparing for the future. We strive for excellence and timeliness in the quality of our work.

Teamwork: We form effective work groups that maximize resources and deliver high quality services within and across departments. We listen to each other and give honest feedback.

Current Environment

Working Together with the Same Goals in Mind

Section 3 – Current Environment

Aligning with departments to enhance citizen services

State of the art enterprise datacenter, network connectivity citywide, a highly responsive help desk, advanced application services and a best practices project management & department alignment process that enables rapid and continuous deployment of new services.

Information Technology Organization

Chief Information Officer (CIO): The Department of IT is led by the Chief Information Officer who is responsible for the City's overall technology strategy, overseeing all IT department activities, providing SmartRiverside leadership and for collaborating with City departments and the City's senior executive team in setting priorities, securing funds and delivering services.

The **Xerox Account Director** collaborates with the CIO and CTO and ensures that Xerox (IT outsource partner) executes on the priorities and projects established by the Executive Technology Committee (ETC) and CIO. With support from the CIO, CTO and Xerox corporate resources along with feedback from City departments, he generates the annual strategic plan and department policies. To attract and maintain the best IT talent while staying within budget, he works closely with IT management to evaluate and satisfy staffing needs on an on-going basis.

The **Chief Technology Officer (CTO)** backs up the CIO and is responsible for technology procurement and the day-to-day activities of the IT Department's four Operating Divisions:

- The **Operations and Systems Services Division** is responsible for system and storage configuration, implementation and administration. They focus on system design, conformance to standards, maximizing system performance, capacity planning and disaster preparedness.
- The **Network Services Division** is responsible for management of the City's local and wide area networks, copper, fiber and wireless communications, video security, and telecommunication services. This division also assures adequate security measures are in place to protect the City's network from unauthorized access.
- The **Client Services Division** is responsible for help desk and desktop support services. The help desk receives problem and service calls, creates an information log, routes calls to appropriate IT staff and tracks for timely resolution. This division also supports installation and replacement of desktop and laptop computers, printers and standard desktop applications, such as Microsoft Office and Outlook.
- The **Application Services Division** is responsible for support of enterprise systems; selection leadership and integration of new commercial-off-the-shelf (COTS) solutions; maintenance and upgrade of existing systems; architectures, software and database standards; web development; and GIS support.

Information Technology Officers (ITOs) are the primary point of contact between City Departments and IT. The ITOs work closely with the departments to understand their business processes and resource needs, identify solutions, initiate IT projects, coordinate technology services and report status.

Project Management Office (PMO): The PMO is responsible for ensuring all IT projects have a detailed project plan, adequate funding, and executive sponsorship. The PMO is also responsible for reviewing project plans on a regular basis and making sure they are current and posted on the Internet. The PMO provides project staff support to the CIO and participates in weekly update meetings with the CIO, CTO, Xerox Account Director and the ITOs.

Digital Inclusion Team: This team distributes on average 150 free wireless enabled computers with Microsoft Office and internet connection devices to low income families in Riverside each month. As staff for SmartRiverside, they receive and track donated computer equipment, rebuild systems, manage the e-waste program, write grants, run an e-bay sales program, provide technical help, and support fund-raising events.

Administrative Support is responsible for coordinating IT procurement, finance, budget, payroll, and personnel services.

City of Riverside Information Technology Department

Chief Information Officer

- Information Technology Officers, Budget, IT Procurement
- ACS Account Director
- Digital Inclusion, PMO, and Administration Support

Chief Technology Officer

- Client Services
- Network Services
- Application Services
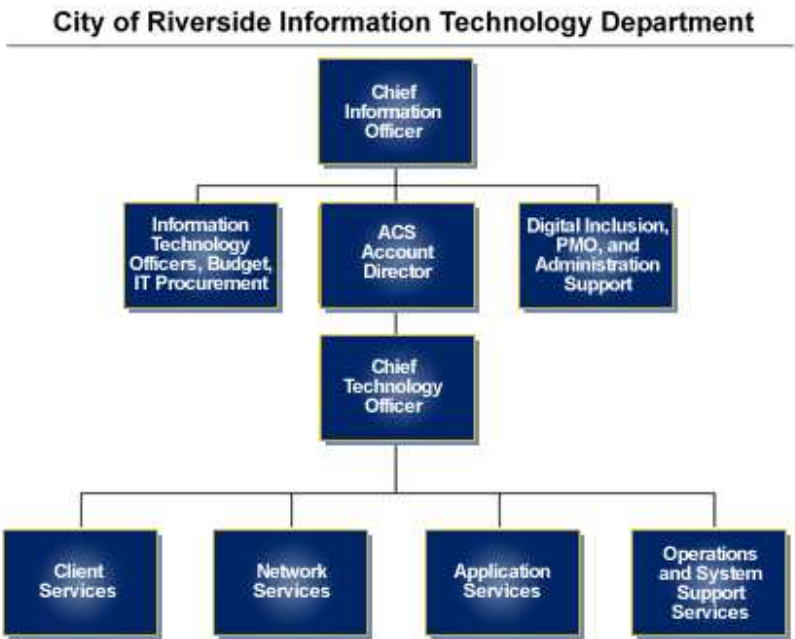- Operations and System Support Services

Exhibit 3-1. The IT department is organized to provide premier service to City Departments

3.1 Operations and Systems Services

The City has a secure and reliable "state-of-the-art" enterprise data center. IT has centralized 300 Dell and HP servers into a secure environment with half the servers virtualized onto 12 physical hosts. This has given IT a 12 to 1 productivity improvement compared to traditional methods of server computing. IT also has more than 125 terabytes (trillion) of tier 1 & tier 2 storage and 130 terabytes of tier 3 storage providing the space needed to support advanced integrated voice, data and video computing.

The City's modern Emergency Operations Center (EOC) is located several miles away from City Hall. This earthquake resistant building serves as a disaster recovery facility and is an excellent location for a backup datacenter. The EOC houses the City's Reverse 911 system and is being used to replicate Active Directory, RPU's power trading system, important file level data, and other key applications and infrastructure. More will be replicated to the EOC as funds and priorities permit. Both the EOC and the enterprise data center are protected by generators with redundant UPS systems that provide ample alternative power should it be needed.

Over the past year the operations and support team has centralized and consolidated servers, increased capacity, improved security and switched from tape to disk media for primary backup. Restores that used to take one day or longer can now be done in minutes.

Operations and Systems Services include:

- **System Administration Services** – Server configuration and management, server inventory tracking, testing, patching, antivirus monitoring, power management, and operating system upgrades.
- **Storage Administration Services** – Configuration and management of system storage units and tape back-up processes (including off-site storage).

Operations and Systems Services Provide:

- **Anti-virus and anti-spyware** service to monitor all City servers and desktops. The division has also deployed an email scanning service to identify malicious emails that may have made it past the filtering service. This software is used to centrally manage these services.
- **Software distribution and patch management** for servers and workstations using Microsoft Systems Center Configuration Manager (SCCM).
- **Administration of employee network accounts** using Microsoft's Active Directory software.
- **Physical access control** at the location(s) where the system-wide data is stored.
- **Email filtering** service for all incoming email from the public. This service eliminates up to 99% of unwanted email before it reaches the City's network. Additionally, if the City's system is not accepting email for any reason the service will encrypt and queue email until the client server is back online.
- **Administration of secure remote access** for employees and vendors using 2-factor authentication (token and password).
- **Power Management** for all desktop and laptop devices making sure they are configured for optimal power consumption.

Photos of the data center are shown in the Exhibits below:

Exhibit 3-2. Data Center after remodel

Exhibit 3-3. Jim Smith in the City Hall Data Center

3.2 Network Services

The City of Riverside has an advanced network system that includes high speed fiber communications to core facilities, multi-tiered wireless connectivity everywhere in the City and working partnerships with leading communications companies.

Exhibit 3-4. Network Operations after Remodel

Applications implemented and supported on the new high speed and wireless networks include in-vehicle video solutions, libraries with computers instead of books (cybraries), advanced learning centers in youth and senior centers, mobile broadband communications, and advanced traffic flow systems. The network team has replaced T1 data circuits with fiber to significantly increase network speed and converge voice, data and video networks.

Network Services include:

Exhibit 3-5. Steve Crunk in the Network Operation Center

- **Data Network Services-** Security & firewall configuration, network administration, wireless support and all local area (LAN) and wide area network (WAN) services.
- **Video Network Services:** Requirements analysis, design, configuration, acquisition, installation and monitoring to support the fast growing application demands for video security, graffiti abatement, traffic control and other video solutions rolling out City-wide. There are 300 video cameras operational throughout the City and 200 more scheduled for installation this year.
- **Telecommunications Services-** This team supports more than 560 data circuits, 56 T1 connections, 2500 handsets, 500 feature cell phones, and 300 smartphones and tablets. A diagram of the City telecommunications network is shown in Exhibit 3-7.
- **Network Security Services-** On-site support is provided from 8am until 5pm daily and 24x7 for on-call emergency service. The following network security measures are in place to protect City information assets:
- **Network Segmentation-** Virtual Local Area Networks (VLANs) are used to "virtually" separate departments from each other while enabling physical resource sharing in order to simplify network management, control costs and improve staff productivity.

- **Firewall Segmentation**- Physically separates the City network from the public and provides City departments with "virtually" isolated environments. Unauthorized users are prevented from accessing the City's networks.

- **Encryption**- All City network traffic that passes through public access is encrypted in order to provide a high level of information security. This is especially important as the City expands its use of wireless and Internet connectivity.

- **Proxy Server**- Used to filter and log all outbound traffic to the Internet, control the types of sites City employees are allowed to visit and prevent certain kinds of Internet information from entering the City network.

- **Reverse Proxy Server**- Separates City Servers from public access.

- **Intrusion Protection**- Network monitoring software and processes that help detect and prevent unauthorized users from compromising and penetrating our network.

- **Vulnerability Assessments**- Health checks are conducted monthly for all data center and police servers to make sure they are protected from outside attacks, unauthorized access and other security violations.

- **Annual Penetration Test**- Conducted yearly by ACS to evaluate the potential for external influences to penetrate the City Network.

Diagrams depicting the City's network & telecommunication configurations are shown in Exhibits 3-6 and 3.7.
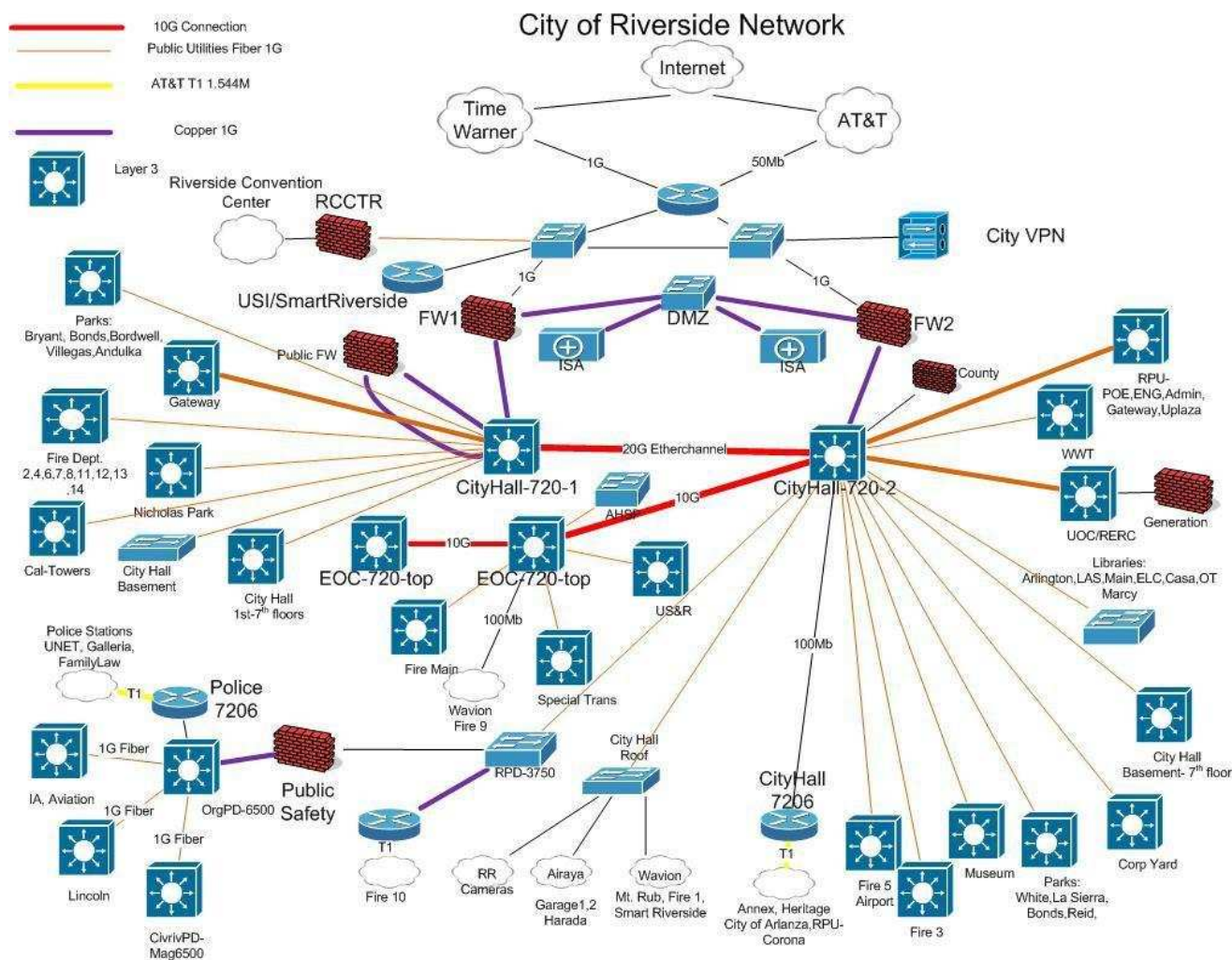
Exhibit 3.-6. The City utilized fiber, T1 and wireless communication methods to support City facilities.
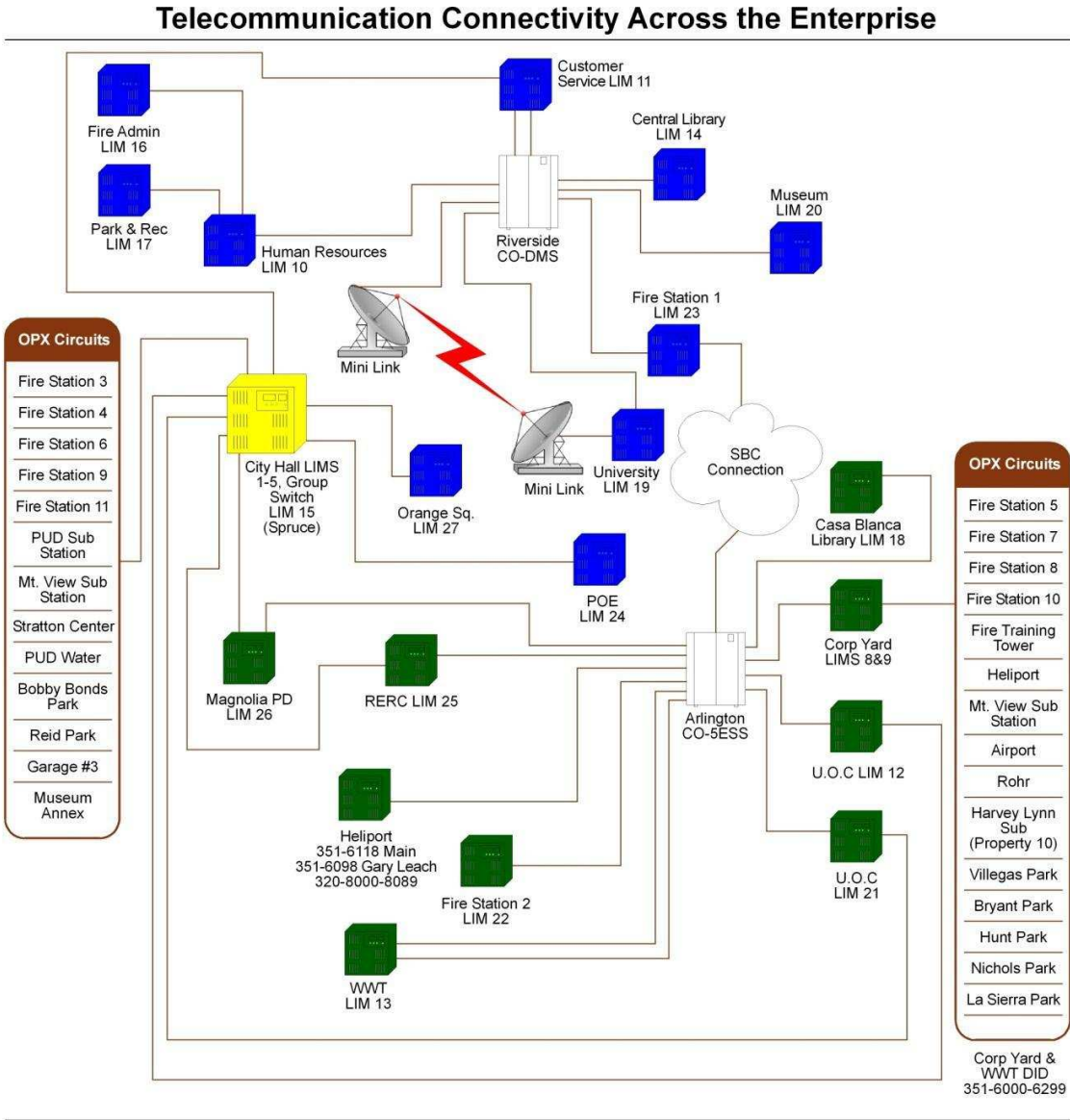
Telecommunication Connectivity Across the Enterprise

Exhibit 3-7. Riverside telecommunication network supports all City facilities

3.3 Client Services

This highly skilled and service oriented team is uniquely crossed trained so everyone can provide hardware, software, network and telecommunications support anywhere in the City. This team provides very fast response to approximately 1700 service requests each month in support of the City's 2100 computers and 56 desktop software products at more than 60 locations Citywide. Every technician is trained to set up computers, load software, synchronize blackberries, get employees productively working within minutes and provide whatever ongoing support that may be required.

- **Help Desk Services –** Help Desk technicians respond to all telephone and email inquiries to the City's Help Desk. Help Desk technicians conduct first level support and diagnostics and create tracking tickets based on the type of service required.

- **Desktop Services –** Desktop Service technicians provide Level 2 support. Desktop technicians receive ticket requests from Help Desk Services. The desktop technician then contacts the user, schedules an appointment and provides second level support via remote access, phone support or in person.

The client services team is also responsible for performing all operations pertaining to the monitoring of nightly utility billing processes, generation of nightly utility bills, and generation of utility billing reports.

Hardware Standards

Device Type	Vendor	Quantity
Desktops	Dell	1800
Laptops	Dell	50
Field Rugged Laptops	Panasonic	250
Laser Printers	Dell	800
TOTAL		3,500

Client Services

Services	Responsibilities
Helpdesk Hours	8:00am to 5:00pm M-F
24 / 7 Support Coverage	After hour on-call support for urgent needs
Helpdesk Rotation	All tech support staff rotate duty every 9 weeks
Tier 1 Support	Respond to incoming calls and emails with service requests, create & close tickets, remote assistance, and monitor call tracking & client call backs
Tier 2 Support	Field support to resolve HW & SW issues at the source
Tier 3 Support	Obtain support to resolve any issue
Escalation	Alert System to escalate issues that affect more than 3 clients
Wireless Mobile Telephones	Activation and configuration of AT&T, Verizon & Sprint/Nextel mobile phones

Services	Responsibilities
Handheld Devices	Activation and configuration of smartphones, tablets, and cell phones
Wireless Broadband Adapters	Activation and configuration of AT&T and Verizon wireless broadband cards
System Monitoring	4 wide screen displays monitoring server activity, traffic and error alerts
Utility Department Reporting	"Daily Billing Process" report (2/day)
Naming Convention Verification	Ensure all network PCs are properly named
Operating System Upgrades	Maintain common Operating System and productivity suite software on PCs
Application Upgrades	Ensure all Microsoft Office products are upgraded with latest patches and updates
City Manager & CIO Projects	Special Events – laptops, presentations, wireless/Inet access & documentation
Field Sites	Support every City of Riverside facility
Fire Department	24/7 support for GPS & CAD equipped emergency vehicles
Police Department	24/7 support for vehicles equipped with video cameras, audio, GPS and 4.9Ghz wireless access
City Council	Council meeting hardware, software, audio & visual presentation & Internet broadcasting support

Desktop Software Standards

Vendor	Desktop Software/Net Device	Description
Microsoft	Office 2010 Word	Word Processing
Microsoft	Office 2010 Excel	Spreadsheet
Microsoft	Office 2010 PowerPoint	Presentations
Microsoft	Office 2003 Access	Database Management System
Microsoft	Office 2010 Publisher	Document Publishing (low end)
Microsoft	Sharepoint Designer 2007	Web Design
Microsoft	Visio 2003	Diagramming/Org Chart
Microsoft	Project 2003	Project Management
Microsoft	Outlook 2010	Email/Calendar
Microsoft	ForeFront EndPoint Protection	Anti-Virus Protection
Adobe	Acrobat Reader, Pro 7, 8 & 9	PDF Reader/Creator
Funk Odyssey	Odyssey Access Client	Wireless Client
Quark	QuarkXpress 7 and 8	Desktop Publishing (high end)
NetMotion	RadioIP MTG	Wireless session persistence
Motorola Premier MDC	PMDC	Wireless Mobile Data Communication
Corel Company	WinZip	Zip Data Compression
Faronics	Deep Freeze	Desktop Restore
Ventyx	Banner	Customer Info System / Billing
Accela	Permits Plus	Permit, Business Tax, and Code Enforcement Automation Software
Compulink	LaserFiche	Document Imaging
RivCity	Helpdesk and timekeeping	Service Call Tracking System
Microsoft	Systems Management Server (SMS)	Systems Management/Software Distribution
ESRI	ArcInfo	Spatial computing

Vendor	Desktop Software/Net Device	Description
ESRI	ArcGIS	Geographic Information System
Honeywell	Badge Security Access	ID Badge Access
Genetec	Omnicast Live Viewer	Video Security Software
RecWare	SAFARI	Park facility reservation
CORE	iPayment	Cashiering
Cycom	City Law	Case Tracking Application
Innovative Interface	Millennium	Public Access catalog
NCR	Remittance Processing	Check Processing & Scanning
GO Software	PC Charge	Credit Card verification
Omega Group	Fire View	Fire Analysis
Omega Group	Crime View	Crime Analysis
i2	iCentral	Visual investigative analysis
Motorola	Printrak	(CAD)Computer Aided Dispatch
VisionAir Inc	Vision RMS	Records Management System
PDSI	Telestaff	Staff scheduling
SS&C	Skyline	View 3d & hi-res terrain images
David Systems	Worker's Compensation	Workers Compensation Data Base
Coban	VMDT	Mobile Vehicle Video Recording
MicroPaver	Pavement Management	Street Condition/Repavement
Cop Ware	Cal Legal Sourcebook	Penal & Vehicle codes
RouteMatch	Community Transportation	Transportation mgmt & scheduling
Audama	Ops Center	In / Out Electronic Board
Olympus	Digital Audio /Play Recording for PD	Wireless recorders for Officers
Datastream / MP2	Equipment Maint (Public Works)	Asset performance tracking
Microsoft	(MOSS) Microsoft Office SharePoint Server	Web content mgmt & info access
AT&T	UMTS (Mobile Broadband)	Wireless Mobile Adapters
Aruba	Wireless Access Points	Wireless Access Antennas (Internal use)
AT&T	Blackberry / RIM / (AT&T)	Handheld Wireless Devices
AT&T	BelAir / Nokia Siemens Netwks / Wi-Fi	Wireless Access Antennas (External use)
Adobe	Photoshop CS	Professional Image editing
Real VNC Inc	VNC	Remote Assistant Tool
Auto Desk	AutoCad	Computer Aided Design & Engineering

3.4 Application Services (AAS)

This team is highly skilled and experienced in advanced computer system development, software and database architecture, business system process design, spatial (map based solution) analysis and integration, internet technologies, implementation methodologies and has expert knowledge of Riverside's operating environments, core applications, operating systems, databases and support systems.

Last year the application and architecture team delivered more than 25 solutions to City departments. Carry-over demand this year already exceeds 50 requests.

Exhibit 3-8. Donna Arrechea, Jeanette Barnes, Dave Reynolds, Saul Melara, Steve Crunk, Juan Romero, Christine Spahr and Jim Smith discussing the VOIP project.

Application Services include:

- **Application Review and Assessment Services (ARAS)** – Review and assess all new application acquisitions and development for concurrence with citywide standards. An Application Review and Assessment Committee is convened as necessary to review and approve requests.

- **DBA Services** – Configuration, management, and upgrade of the City's Oracle and SQL database systems. Currently, the team also supports Informix, which is scheduled to be phased out over the next few years.

- **Web Development** – Design, update and maintain the City's Internet and Intranet. The web development team works with each department's subject matter experts to design and construct web sites and review and add content to the department's site. The team also develops and maintains web-based forms.

- **GIS Services** – Develops and maintains GIS data, tools, models, metadata and support for spatial & web applications. They customize spatial data for map based web applications, generate data layers, provide cartographic output, distribute GIS-related software and licensing, conduct training, centrally store and manage GIS data and optimize performance.

- **Commercial-Off-The-Shelf (COTS) Services** – Vendor coordination, client interface, application configuration/management, and report creation for software applications. The team works closely with departments to define and communicate requirements to the COTS vendors. Application Architecture Services supports over 130 application packages utilized by City departments. A listing of the applications is found in Appendix A.

Top architectural priorities this year based on department needs include:

- **High Availability** in every system. The AAS team has implemented an Oracle Real Application Cluster High Availability Environment. Core City applications share processing, storage and memory while remaining securely & virtually isolated to their own space. Spare, new or existing resources can be dynamically allocated anywhere needed to compensate for capacity peaks, outages or system slowdowns to ensure high performance and availability at all times.

- **Data Warehouse Reporting** that users can easily do themselves, accessing any data from any system within minutes. The AAS team vision is to create a real time (with high speed bi-directional communications) duplicate data center environment at the EOC for selected core applications and all databases. The databases at the EOC will be integrated into an advanced data warehouse and provide all authorized city users a single integrated view of the data fields they need for reporting purposes no matter what system (IFAS, Banner, Permits, etc) the original data was associated with. This will allow the team to isolate reporting to the EOC and production to City Hall. Both will have the same up to the second real time information. Users will do their work using the City hall data center and reporting using the EOC and not even notice the difference. Users producing reports will not slow down production or cause outages. The goal is for advanced self-service reporting and high availability zero-downtime production computing. The team has already piloted this plan with multiple smaller data warehouse environments with very promising results.

- **Integration:** AAS is currently working on 25 top priority application projects in response to department requests for advanced functionality and new citizen services. Users are requesting easy to use graphical and map based interfaces and only want to sign on one time to get to whatever system and information they need. They want the new systems IT provides to work together and integrate with systems City departments are already using. Further, they are requesting online self-service capability that requires no or minimal training.

  To meet these needs the IT department has standardized on "Best Practices" software integration architectures that provide the tools to meet these requirements. Adhering to these architectures is enabling IT to select custom off the shelf or build applications that have modular, reusable components, are easy to maintain and allow a choice of interfaces. Future systems will be integrated, have a single sign-on, be easy to learn, provide advanced analytical self-service reporting, and require minimal maintenance.

- **Web-based Application Development:** AAS is tasked with providing innovative, secure, scalable, and cost-effective software solutions for the city. To meet these needs, AAS prefers the use of web-based application architectures for both off the shelf and custom software development. Web-based applications allow AAS to deploy new application versions centrally on city datacenter application servers and Oracle and Microsoft SQL Server databases. Decentralized access to applications uses the city network and web technologies that are light-weight and efficient. Web standards and browsers continue to evolve and improve. Improvements such as HTML5 and JavaScript, coupled with the city's high speed data-network, allow AAS developers to create increasingly rich application interfaces for users.

This architecture provides many synergies to other IT divisions. For example it lessens the burden on the client services division to install applications on every workstation because there is no application installation. Additionally the bulk of the application processing is occurring on the server-side, therefore reducing the need to upgrade workstation hardware.

AAS is able to use this architecture to run on multiple hardware platforms, including mobile smartphones and tablets. Existing investments in personnel training as well as existing assets, such as servers, are leveraged by AAS to deliver innovative software to mobile devices.

Web-based applications also lend themselves to integration using SOA architectures because they use the same fundamental technologies. Many of ITs most innovative solutions are built as web-based applications that are interfacing to our core enterprise systems using SOA. Finally these same standards are used by AAS to publish citizen facing online services.

- **Geographical Information Systems (GIS):** The City provides a large amount of location-based services, including assisting citizens in evaluating and improving property, obtaining permits and getting inspections completed, efficiently using emergency services, resolving various code violations in city neighborhoods, managing and repairing power, water and other utilities, optimizing traffic flow on busy city streets, keeping city streets properly maintained, obtaining information about city activities and reserving and using city park and recreational facilities. Employees and citizens have expressed that they want simpler, easier to use map based solutions for any or all city services because they are more efficient and drive higher productivity.

  The City of Riverside already has a number of leading edge GIS solutions in place, and is continually considering, evaluating and where appropriate, implementing more. The City has extensive GIS (map-based) data holdings and a team of highly skilled GIS developers continuously integrating map-based GIS solutions into other applications.

  New GIS projects being implemented include the Traffic Management Center (TMC), the web-based Property Profiler, the Graffiti Analysis Tool (GAT), Reverse 911 system, a Computer Aided Dispatch System fully integrated with GIS mapping available in every emergency services vehicle, and the 311 Call Center. City staff is actively working at building an Operational Awareness Dashboard at the Emergency Operations Center and fully integrating Work Order Management with the GIS data using ArcFM.
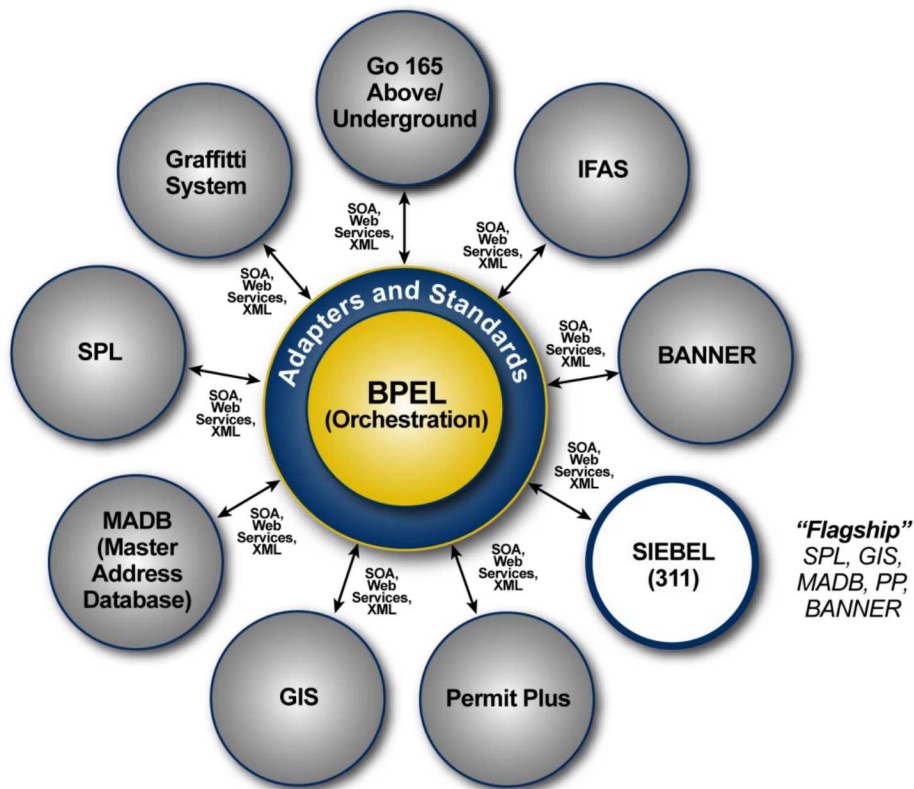
Integration Architecture

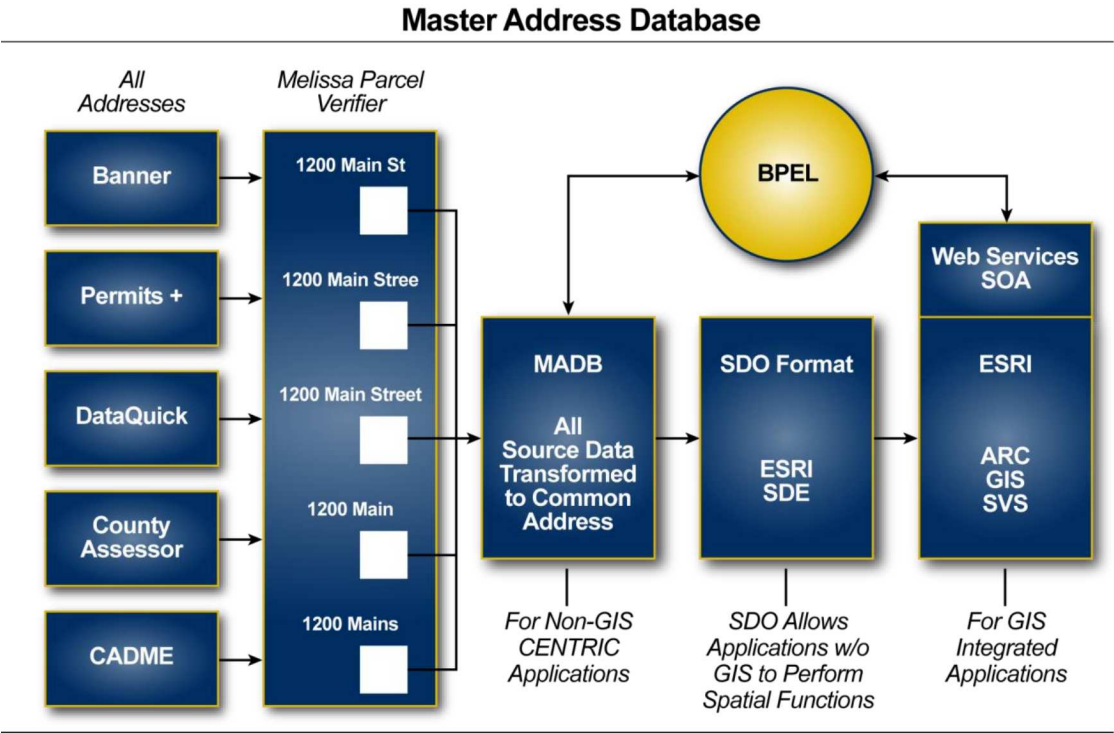Exhibit 3-9. All systems will use BPEL orchestration and web services to exchange information.

Exhibit 3-10. The IT Department has built a master address database. All addresses and locations are represented the same way to all applications enabling efficient and

Strategic Alignment, Governance & Project Mgmt Methodology

Working Together with the Same Goals in Mind

Section 4 – Strategic Alignment, Governance, & Project Management Methodology

Aligning with departments to enhance citizen services

Aligning with City Departments to continuously improve the services provided for citizens, businesses, organizations and visitors.

Exhibit 4-1. IT project management is a continuous process involving the entire City.

4.1 Continuous Improvement

The Information Technology (IT) Department has implemented a "Best Practices" Project Management Office (PMO) and Department Alignment Process that combines the talents of our people with the constant advances in technology enabling high productivity while continuously improving the services departments offer. All Initiatives involving technology are reviewed bi-weekly within IT and monthly across the City departments for progress, priority and needs in order to resolve issues, assign resources and complete projects on time and within budget.

4.2 IT Governance

Information technology at the City of Riverside is governed by the Executive Technology Committee, the Chief Information Officer and Department Directors.

- **Executive Technology Committee (ETC).** The ETC includes the City Manager, Assistant City Managers, Chief Information Officer, and five Department Directors appointed by the City Manager. These directors include the Police Chief, Fire Chief, Director of Public Works, Director of Public Utilities, and the Director of Community Development. The ETC meets monthly and is chaired by the City Manager. The Committee reviews project status, sets priorities, approves funding and discusses new initiatives.

- **The Chief Information Officer (CIO).** The CIO is responsible for the City's strategic use of technology, managing the Information Technology Department and working closely with City departments to improve processes and enhance citizen services. The CIO provides ETC and Information Technology Technical Committee (ITTC) leadership, collaborates with Department Directors regarding technology decisions and works with the City Manager's Office to secure funding for IT projects.

- **Information Technology Technical Committee (ITTC):** The ITTC includes representatives from each of the City's departments, BSAs, ITOs, project managers, IT Division Managers, the CIO, CTO and Xerox Account Director.

  ITTC meetings are held quarterly and are an important conduit for communicating technology project status to the department users. The Agenda includes the City's top 10 priority projects, projects nearing completion, project demonstrations, issue discussion, and an exchange of ideas.

- **Business Systems Analysts (BSAs):** The BSAs are subject matter experts on applications deployed in their department(s). They provide requirement definition for new technology needs, department user systems support and user level application training. The BSAs meet frequently with the Information Technology Officers to review progress, resolve issues and discuss new initiatives.

Department Communication

There is frequent and consistent communication between the City departments and IT. Department leaders meet in staff, committee and council meetings, and for project updates. The Information Technology Officers (ITOs) provide single point of contact leadership to departments, and Department Business Systems Analysts (BSAs) provide a similar role in working with IT.

4.3 Project Management and Department Alignment Process

IT projects are initiated by sponsoring departments, reviewed by the CIO, added to the master project list (more than 200 projects are on the current list) and assigned an initial priority. The Project Management Office then creates an online automated project that is assigned to an ITO to manage. The ITO identifies resources, communicates progress, updates the plan and reviews status bi-weekly with the CIO, monthly with the department leadership team and quarterly with the ITTC. Funds and resources are allocated based on ETC priorities at their monthly meeting. A work flow of the process is shown in Exhibit 4.2.
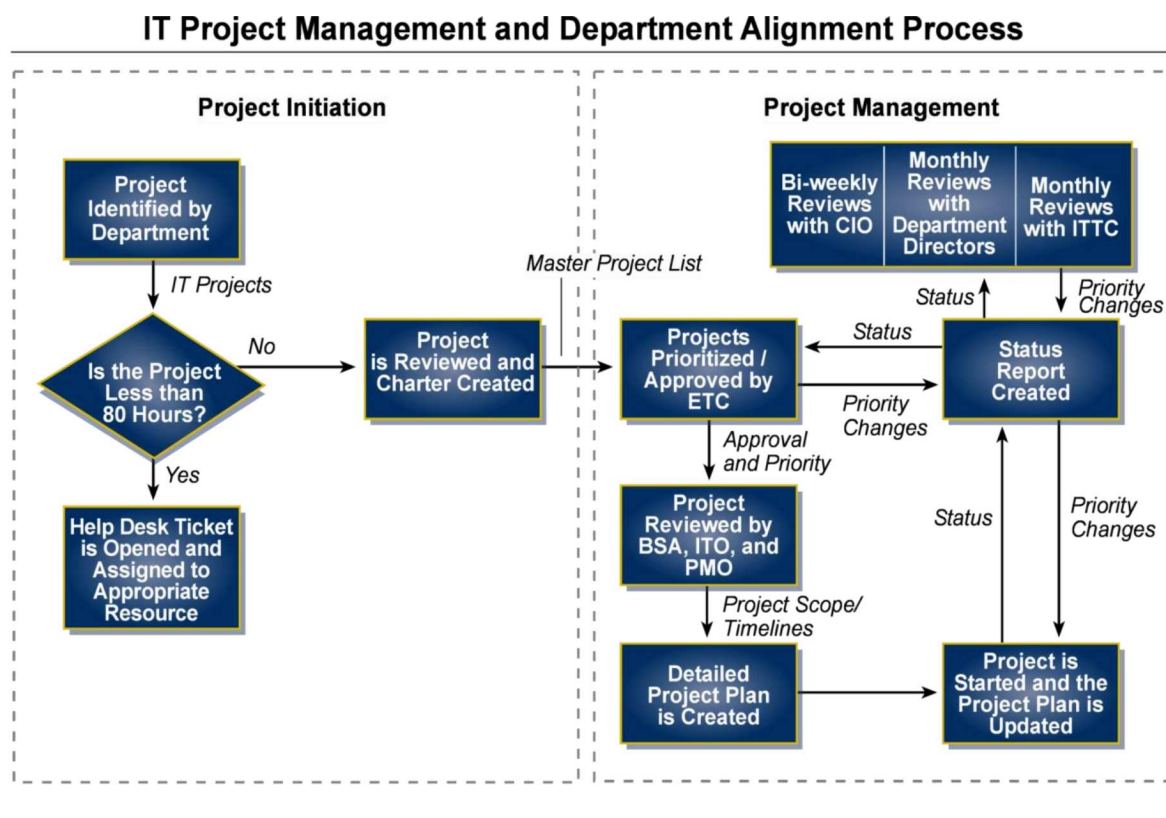

Exhibit 4-2. The IT Project Management and Department Alignment Process ensures that each project is identified, tracked, prioritized and completed.

4.4 Project Initiation

As projects are identified, projects greater than 80 hours are added to the master project list. Projects are added with a specific color code. Projects with a color code of white means the project is neither approved nor funded. When a project is approved, it moves to a color code of yellow and IT allocates resources to the requesting department to begin scoping the project. Once a project is scoped and funding is secured, it moves to a color code of green, a project manager is assigned and necessary resources are made available. If resources are not available, Xerox may bring in additional resources as budget allows to meet the required department deadline. Otherwise, the goal is to complete projects with available resources in house. All Xerox staff are full time and dedicated to the City of Riverside.

Projects projected to be less than 80 hours are submitted as work order ticket requests to the IT Department Helpdesk where they are prioritized and completed as resources become available.

4.5 Project Management

IT and department resources work together on a daily basis to complete project tasks on schedule and within budget. Project status for all IT projects is reviewed with the CIO, CTO, Xerox Account Director and PMO every two weeks. ITOs provide status updates for Department Directors and their staff and the ITTC every month/quarter respectively. The CIO discusses projects with Department Directors and the Senior Executive team on a daily basis as well as at ETC and ITTC meetings.

4.6 Project Funding

Projects are funded from the following sources:

- **General Fund** – When the project has general city-wide impact.
- **Departmental Budgets** – Budget analysts work with departments and place all information technology projects into the IT budget with project numbers so funds can't be used for discretionary purposes. When a project is completed the department is refunded any remaining balance it decides not to allocate to another project.
- **State and Federal Agencies** – The City's IT department works with other City departments to identify alternative sources of funding including state and federal grants.
- **SmartRiverside's Digital Inclusion Program** – Smart Riverside generates over $250,000 annually from its e-waste program, charitable golf tournament, e-bay sales, and donations. These funds help support the City's digital inclusion program that donates 150 free wireless computers to low income families every month.

During the budget cycle, each department identifies IT projects to be accomplished during the fiscal year and collaborates with IT to estimate implementation costs. Project costs are included in the IT Department's budget request submitted to the City Manager and City Council for approval. Projects added outside the budget process are unfunded and must be added to the project list, prioritized and funded following the process outlined above.
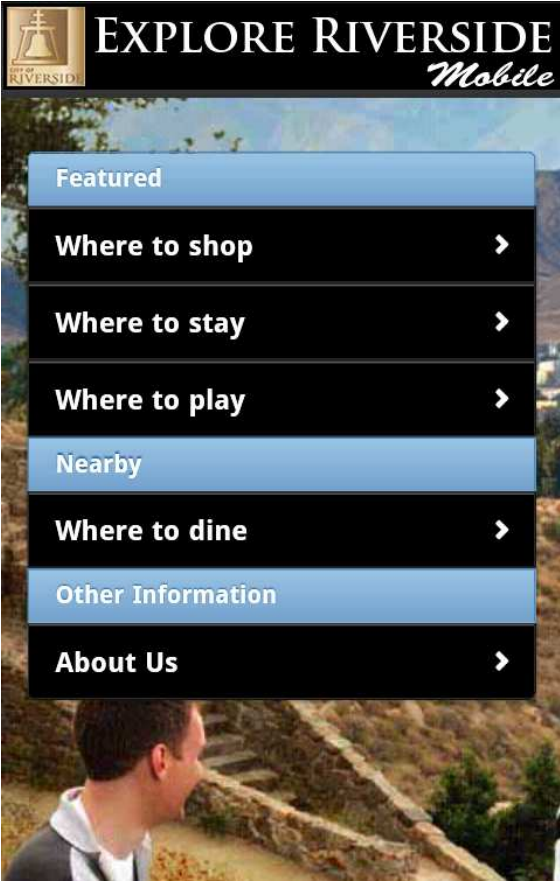
Recently implemented smartphone (iPhone and Android) project for the City Manager's Office of Economic Development.

Information Technology Strategic Initiatives

Working Together with the Same Goals in Mind

Section 5 – Information Technology Strategic Initiatives

Aligning with departments to enhance citizen services

Ten Strategic initiatives form the framework for priorities set, decisions made and projects pursued

5.1 IT Department Commitment to Green Computing

In the April 2009 edition of ComputerWorld magazine, IBM estimated that the world's datacenters produce more carbon in a year than the total electricity usage of 36 million homes.

Green computing is the study and practice of designing, manufacturing, using, and disposing of computers, servers, and associated subsystems – such as monitors, printers, storage devices, and networking and communications systems – efficiently and effectively with minimal or no impact on the environment.

The City of Riverside IT Department is committed to using technology to conserve energy, lower carbon emissions, keep our environment clean, and save money.

1. According to Gartner Group, **consolidation** is still the best and simplest way to achieve energy savings: In Riverside, IT operations, servers, storage, networks and other resources have been (and continue to be) consolidated resulting in improved security, operational efficiencies, and hundreds of thousands of dollars in savings.

2. VMWare, one of the leading companies offering server virtualization solutions estimates that for every server virtualized organizations can save about 7000 kilowatt hours and 800 pounds of CO_2 emissions, every year. The City of Riverside has reduced the number of its physical servers in its data center by more than 50% through **server virtualization**. Virtualizing more than 150 servers has improved service quality, reduced electricity and other costs, reduced risks, accelerated provisioning, and simplified software testing.

3. The City of Riverside has implemented **PC Power Management Software** to save more than 250,000 kilowatt hours and 150 tons of CO_2 per year by centrally managing power settings of its more than 1500 desktop PCs ensuring they are available when needed and not wasting energy when not in use, at night and on the weekends. Power management software is designed to reduce energy consumption 20 to 60% and save $25 to $60 per year for each computer.

4. **E-waste** is the fastest-growing waste stream in the U.S. Reusing and recycling materials from end-of-life electronics conserves our natural resources and avoids air and water pollution, as well as greenhouse gas emissions that are caused by manufacturing more than needed new products. The City of Riverside's Digital Inclusion Center is a California certified collection site. The center recycles 200 tons of computer and electronic equipment each year and uses the revenue from this program to help pay for the 150 free refurbished PCs given away every month to low income families to help "bridge the City's digital divide". Every one of these PCs is provided with free

technology training and free wireless internet access from anywhere within approximately 78% of the City's 55 square mile developed area.

5. According to the United States Environmental Protection Agency (EPA), data centers in the United States have the potential to save up to $4 billion in annual electricity costs through more energy-efficient equipment and operations, and the broad implementation of best management practices. The City of Riverside IT Department has established an **energy efficient datacenter**. Equipment racks adhere to hot/cold isle design, floor vents are strategically placed, and regular collaborations with power generation, air-conditioning, UPS, hardware/software, and consultant partners occur on-site.

6. All purchased systems must conform to EPEAT Gold Standards to maximize power savings to the city and reduce CO_2 emissions.

7. Strategic vendor partners are committed to green technology *

In 2007, **Dell** committed to be the greenest technology company on the planet. Dell is the first in the tech industry to go operationally carbon neutral, first to offer carbon offsets, first to offer a free consumer recycling program and is rated the leading green brand among IT buyers (Green Factors study/Forrester Research).

EMC offers advanced products, tools, and services to optimize energy efficiency, consume less energy per terabyte than alternative solutions, and tier storage to save power.

VMware virtualization software enables customers to build green IT infrastructures while reducing energy costs up to 80% by significantly reducing physical server requirements.

- Every server virtualized saves about $700 in annual energy costs.
- **Virtualization improves server utilization rates from 5-15% to 60-80%.** Running fewer, highly utilized servers frees up space and power.
- Every server virtualized takes the equivalent of 1.5 cars off the highway.

VMware facilities are composting food waste, using reclaimed building materials, drougt-tollerant plants, low-flow water faucets, and diverting 75% of waste from landfills.

Red Hat Linux's low overhead and high-performance operating system enables cost savings through efficient operations, server consolidation, and support for the latest power saving features. In 2008, InfoWorld named Red Hat the Greenest Operating System in the world.

Oracle is committed to developing practices and products that help protect the environment. Each year Oracle customers are recognized with Eco-Advantage Awards for using Oracle software to cut costs, reduce risks, drive revenues and improve brand reputation by running lean and green.

Organizations can achieve an eco-advantage by cutting out waste, using resources productively, minimizing carbon footprints, and improving product and service designs based on green processes.

Microsoft is committed to software and technology innovation that helps people and organizations

around the world improve the environment. One of the ways it does this is by providing a tool organizations can use to estimate their carbon footprint and see the savings that can be achieved through enlightened IT implementation.

Microsoft provides a number of IT solutions that deliver significant savings through a combination of energy conservation, improved workflow, and streamlined deployment.

Cisco has an executive-led EcoBoard to achieve business processes that reduce a company's environmental impact. Focus is on smart grid solutions, energy-efficient data centers, efficient work practices, smart buildings, remanufacturing, and a cross-functional Green Engineering Task Force to drive innovation in solutions and products.

At Xerox environmental health and safety sustainability is the way of doing business. Focus is on green initiatives that will maximize the efficient use of assets from the design of data centers to the ways in which people interact with one another.

Xerox is committed to eliminating the use of toxic materials and heavy metals from its product supply chain, reducing facility carbon emissions, designing products that minimize waste, using recycled materials, reducing dependency on paper, and preserving the world's forests.

* Vendor information represented above is available on their websites, from company representatives and in the April 2009 Computerworld magazine.

Learn more about Green Riverside >

http://www.greenriverside.com/About-Green-Riverside-4

5.2 Wireless Communications

The City has implemented a wireless, broadband, Internet access network that encompasses the City's 85 square mile perimeter. This is one of the nation's largest Wireless–Fidelity (WiFi) Local Area Networks (LANs) designed for free public and municipal use.

The citywide wireless network is composed of two City networks: 2.4 GHz for City business and 4.9 GHz for Public Safety only.
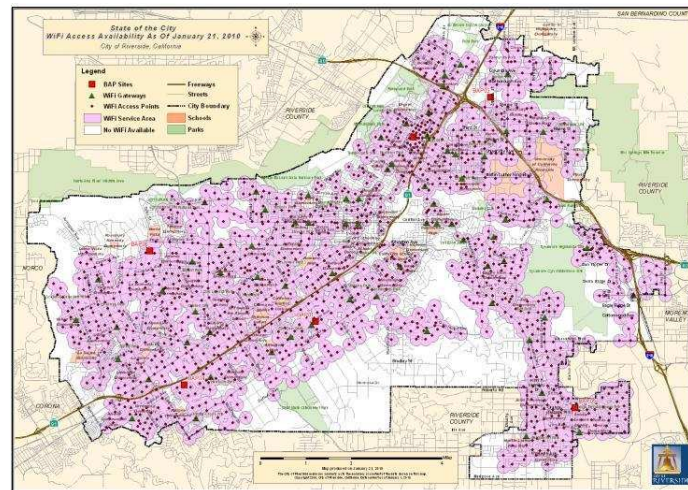
The WiFi initiative includes:

- **Free Internet Access**: The City provides 1 GB Internet connection for WiFi users, Libraries, and Community Centers. The City's WiFi service is free to residents, businesses, and visitors. This service is intended to be an outside network. For inside use, wireless customer-premises equipment (CPE) is required. Ubiquiti, Ruckus and other companies offer CPE.

- **Video Security Projects**: A variety of applications have been implemented for parks, railroad crossings, city facilities, graffiti locations and intersections. This is achieved through the use of permanent and mobile cameras placed where/when needed. The cameras can be set to trigger recording by a series of events. Video is transmitted to the data center where it is stored and available for authorized viewing.

- **In Car Video**: Public safety video is transmitted over the 4.9 GHz network to police headquarters where events are stored and available for review by authorized police records management staff.

- **Traffic Signal Control**: The City's traffic management system is designed to view signals for the progression of light timing to ensure a smoother traffic flow during peak traffic times and to signal real-time controls when traffic congestion exists.

5.3 Security

The City employs proven and reliable measures to provide enterprise wide IT security. Focused efforts include intrusion prevention and detection systems, network and security management tools, periodic audits and assessments, and access control measures.

Strategic IT security objectives include:

- **Administration**: Development and publication of security policies, standards, and procedures which detail authentication, audit, access control, assessment, authorization, and physical security. Policies include screening of personnel, security awareness training, monitoring of system activity, and change control.

- **Authentication:** With the implementation of Active Directory, the City can enforce the City's password protection policy as defined in the City's security policy. This includes the expansion of single sign-on to City application systems so that multiple passwords are reduced or eliminated.

- **Audit:** An objective, independent examination to assess compliance with specifications, standards, contractual agreements, integrity, and other pre-identified criteria to be done annually along with a penetration test to ensure all City systems and networks meet necessary security standards.

Projects to improve system-wide security include:

- **Enterprise Wide Intrusion Prevention System (IPS):** Cisco IPS has been implemented to provide continuous monitoring of the network environment.

- **Complex passwords**: have been implemented to make hacking into City servers more difficult. Sharing of passwords is not allowed. City systems specifically identify the exact employee who accesses every City system and log the activities that have taken place.

- **Annual security assessments:** Each year the Information Technology Department contracts with a third party to identify and measure online security risks and take appropriate action to minimize exposure to those risks. These activities also serve to ensure that there have been no changes in the IT environment that would compromise the City's security in any way.

- **Expanded network security management tools:** Automated tools will be implemented in the network operations center for the wireless network, enterprise wide event correlation and logging. This will provide a detailed analysis of any security incidents that occur within the network.

5.4 Centralization and Consolidation

The city has reengineered IT by adopting a more efficient centralized model aimed at the consolidation of data storage, electronic networks, computers and other resources. Projects supporting this initiative include virtualization of servers through VMWare, migration to database clusters, and expanded data storage on the City's storage area network (SAN). Sharing of resources rather than deploying additional systems, servers and networks provides significant cost savings, enhanced security, simplified maintenance and improved back-up for City departments.

During the past year, funding has been provided for a number of projects to improve server and data storage reliability and performance.

Projects that are underway or planned to address centralization and consolidation include:

- **Expanded server virtualization environment**. This technology is designed to consolidate multiple servers into one physical server. The City has already decreased the number of physical servers city-wide from 220 to 160 while at the same time increasing the number of logical servers available for department applications to more than 300.

- **Expanded Storage area network (SAN)** to accommodate growing demand for video security and streaming, e-mail, map based applications, integrated data reporting and to support department projects. The enterprise data center currently maintains more than 250 terabytes (TB) of storage.

- **Migration of IFAS, SPL and other systems to VMWare** and the enterprise datacenter for improved availability, security, capacity, reporting and data management functionality.

- **Simplification of application integration, e-government and e-commerce internet transactions.** Centralization makes it easier to leverage software and architecture standards, protect web applications and take advantage of vendor discounts. For example, the Finance division has consolidated to a single vendor for on-line payments to ensure lowest merchant fees for the City while providing an easy to use, secure, single payment screen that is used to transact business through the internet.

5.5 Integration

In the past, City applications ran on different hardware and software platforms and were not integrated. Interfacing was done overnight in batch mode. This was time consuming, expensive and a maintenance headache.

The IT Department now embraces integration standards that enable secure sharing of processes and data among applications. Focus is on understanding department business problems, processes and needs and providing solutions that are designed modularly, are reusable, and can work in any vendor environment.

This allows IT to do more with fewer resources for less money while providing new solutions faster that not only solve department problems but integrate with other City systems.

The IT Department has created an environment that allows components to communicate with each other even though they may not have been designed to do so.

Some of the integration building blocks IT is leveraging include Web Services, BPEL, SOA, ETL, OLAP cube, AAI, and GIS.

- **Web Services**: enable applications to interact with one another over the Web in a non-proprietary environment. Using Web services ensures that integration is based on open standards that are language neutral, platform independent and will be supported over time.

- **BPEL** (Business Process Execution Language): is emerging as the standard for assembling a set of discrete services into an end-to-end process flow, radically reducing the cost and complexity of process integration initiatives. It is used to orchestrate disparate applications and web services into business processes. BPEL enables the IT Department to quickly build and deploy these processes in a standards-based manner and include application components that are already in service.

- **SOA** (Services Oriented Architecture): is a methodology for systems development and integration where functionality is grouped around business processes and packaged as interoperable services. SOA separates functions into distinct units, or services which are made accessible over the network so they can be combined and reused in new applications.

- **ETL** (Extract, Transform, and Load): is a data integration technology IT uses to consolidate information from multiple enterprise data sources to create data warehouses. Data is extracted and transformed to fit the data model of the target data warehouse.

- **OLAP CUBE** (On-line analytical processing): is a data structure that allows fast analysis of data. The arrangement of data into cubes overcomes a limitation of relational databases that are not well suited for near instantaneous analysis and display of large amounts of data.

- **Authentication and Authorization Infrastructure (AAI):** AAI is a system (**infrastructure**) that checks to make sure user names are valid (**authentication**) and allowed to view the web resource they're requesting (**authorization**). AAI principles are what IT will use to create a **"single sign on"** for users. When users log in successfully to an AAI enabled resource, the authentication part (who the user is) is valid for as long as the user's browser is open. If the user logs in to another AAI enabled web resource, they won't have to enter their name and password again - a very convenient benefit of using AAI enabled resources

- **GIS** (Geographical Information Systems): Most of the City's applications are location based. Integrating GIS (mapped based) technology into City applications allows IT to provide solutions that are much easier to use and understand.

5.6 Standards

IT Operational Services: Information Technology Infrastructure Library (ITIL) is a set of documents describing best practices in IT service areas (i.e. Change Management, Problem Management, Configuration Management, Release Management, Software Control & Distribution and Help Desk) and is the world wide de facto standard for IT services management. ITIL outlines an exhaustive set of management procedures to support organizations in achieving both value and quality in IT operations. The IT department is committed to using ITIL best practices as a guide for delivering services. IT practices are documented in the IT Department Policies and Procedures Manual and on the intranet. Best practices updates are a continuous activity.

Hardware and Software: IT Department standards are shown in Exhibit 5-1. The City continuously updates hardware and software standards as technology evolves. Adhering to standards enables IT to implement and integrate applications faster, reduce complexities, share resources, save money and train people quickly.

Cloud Computing is a newer model for purchasing computing resources as a service. It offers opportunities for implementing applications within the city. There are three major cloud computing layers: Infrastructure-as-a-Service (IaaS), Platform-as-a-service, (PaaS), and Software-as-a-Service (SaaS). Each layer offers unique advantages and disadvantages. IT evaluates the use of these various technologies on a case-by-case basis using industry recommendations and cost benefit analysis. Evaluation criteria such as cost, data privacy, legal compliance, scalability, reliability, and security are used in the analysis. Appropriate projects are implemented using standard solutions, allowing efficient support and the ability to migrate the solution "on-premise" if service levels are substandard.

All stakeholders have an opportunity to participate in the standards selection process. IT Standards are reviewed by the Executive Technology Committee (ETC) and maintained in the Information Technology Policies and Procedures document.

City of Riverside Technology Standards	
End User Hardware	**Standard**
Personal Computers	Dell Optiplex & Precision
Laptop computers	Dell Latitude & Precision
Public Safety Laptop computers	Panasonic Tough Books
Desktop/Laptop Software	**Standard**
Operating System	Windows XP & Windows 7
Anti-Virus	Microsoft ForeFront
Office Applications Suite	Microsoft Office 2010
Web Browser	Explorer V8.0
E-mail and Scheduling	Outlook 2010
Remote Access	Cisco VPN

City of Riverside Technology Standards	
Servers	**Standard**
Operating System	Windows 2008R2
Operating System	Linux Redhat 5
Directory Services	Active Directory
Storage	Dell / EMC
Applications Environment	**Standard**
New Application	Web-enabled
Email	Exchange 2010
Database (cost conscious 8-5)	SQL 2008
Database (mission critical 24x7)	Oracle 11g and RAC
Cloud Computing	**Standard**
Infrastructure/Platform-as-a-Service	Amazon Web Services
Platform-as-a-Service	Microsoft Azure
LAN/WAN	**Standard**
Cabling	CAT 6 / Fiber / WiFi
Routers/Switches	Cisco
Firewalls	Cisco
Wireless	Aruba (internal)/BelAir (external)
Printers/Plotters	**Standard**
Personal Printers	Dell/HP
Network-connected Printers	Dell/HP
Multi-functional Printers	Xerox
Plotters	HP
Imaging Equipment	**Standard**
Imaging Software	Laserfiche
Mid-speed Scanner	HP
High-speed Scanner	Fujitsu
High-Speed Production Scanner	Fujitsu
Geographic Information	**Standard**
GIS Tools	ESRI

Exhibit 5-1. City standards for hardware and software are updated as technology evolves

Technology Replacement Program: Every technology in the City has a lifecycle and a recommended budget for replacement:

Technology Replacement	Life Cycle
Cell Phones	2 years
Laptops	3 years
Personal Computers	Every 4 years
Servers / Storage	Every 5 years
Network Gear	Every 5 years

Technology Replacement/Life Cycle

Departments are allocated charges for replacement based on the number of desktops in their inventory. Notebook & laptop computers, printers and scanners should be budgeted by City Departments for replacement every 3 years.

Desktop, laptop, and PDA standards are shown in Exhibits 5-3 and 5.-4. The standards change frequently. A listing of the latest standards is maintained on the City's intranet.

Apple iPhone 3GS/4/4S

Exhibit 5-3. City employees use Apple iPhone 3GS/4/4S

Laptop and Desktop Standards

Dell Latitude (office) and Precision (GIS/application development) Laptops

Panasonic Tough Book (field, public safety)

Dell Optiplex (office) and Precision (GIS/desktop publishing) Desktops

Exhibit 5-4. City employees have multiple PC choices.

Exhibit 5-5. *Video Security Cameras are used in intersections, railroad crossings, vehicles, parks, and facilities throughout the City.*

5.7 Infrastructure

The City has implemented a robust, secure, state of the art IT infrastructure that provides high availability, enterprise wide connectivity and the tools necessary to build, integrate, and easily maintain application solutions. The IT department is continuously evaluating and implementing Infrastructure improvements for the City's data centers, networks, and core enterprise applications.

Data Center: The City's Data Center has gone through a complete remodeling over the past five years. What was once an unmanaged room containing a random mixture of hardware and applications is now an Enterprise Data Center featuring standardized hardware and software providing reliable power, efficient cooling, and stringent physical security for all systems contained within its walls.

Enterprise Framework. The City has established an enterprise framework using standard software platforms in order to build internal and external services. This framework provides the foundation for tightly integrated and centrally managed services.

Key software platforms include:

- **Microsoft Active Directory**. This is the directory structure used to store information regarding systems and users. It provides the means to manage the identities and relationships that make up the network environment. Active Directory Services are also one of the key components IT uses to build integrated applications.
- **VMware.** The industry leading virtualization platform enabling the City to run more servers in less space, consume less energy, and provide the highest degree of fault tolerance.
- **Oracle Real Application Cluster (RAC).** A high availability database solution that provides transparent failover, scalability, and fault tolerance.
- **Microsoft Exchange 2010.** A robust and highly scalable messaging platform. Exchange 2010 tightly integrates with Active Directory for ease of management and optimum performance. Exchange 2010 also provides unprecedented connectivity to smartphones and other mobile devices so users can stay connected from wherever they are located.
- **CommVault Simpana.** A centralized platform used to backup all Windows, Linux, and Unix systems. Simpana enables backup, restore, archiving, data de-duplication, and content indexing all from a single console.

The Data Center includes:

- A generator and uninterruptible power supply system for improved availability of all applications.
- Computer racks that hold more servers and save floor space.
- Complete electrical and data rewiring for neat and easy installations and system monitoring.
- Large screen monitors for the help desk to display status of critical hardware and software systems.
- Redundant air conditioning systems for improved system reliability and availability

Network WAN/LAN: Over the past five years the Network Operation Center (NOC) has been completely redesigned to provide the improved performance, availability, and capacity needed to meet the City's growing demand for network services.

The City has installed high speed fiber communications to all core facilities, a citywide wireless network to enable a variety of new and enhanced services, and a demilitarized zone (DMZ) in the network to provide a security layer between internet users and the enterprise datacenter. It is critical that the network is fast, reliable and capable of healing itself in the event of a failure.

Major Infrastructure Projects include:

- Voice Over Internet Protocol (VoIP) telephone solution to integrate voice and data, improve performance, add function and provide better support
- New network monitoring tools for the wireless network and system wide health check monitoring
- Critical systems backup at the Emergency Operations Center
- Enterprise storage system enhancements

Storage Engineer Brian McArtor in the IT data center

5.8 E-Government

The Department of Information Technology provides "24 hour City Hall" services via the internet, call center and on-call services. IT is "pushing" information over the internet for major projects like reverse 911 to alert citizens about emergencies; using the internet to communicate with citizens in order to quickly respond and resolve requests; enabling citizens to make payments and conduct business using the internet; and leveraging new technologies like social networking to improve services.

Other e-government projects implemented include several marketing and advocacy websites and applications such as ExploreRiverside.com and SeizingOurDestiny.com which showcase what makes Riverside unique and sets a vision with the community on where we are going, developing mobile applications and web designs which allow citizens to use government services from the mobile devices and smartphones, and a Citywide website initiative that is making it easier for citizens to access City Hall information and services from wherever they choose.

E-government projects are improving efficiency, saving money and enhancing the City's reputation.

City of Riverside Award Winning Website

More than 1.68 million unique internet users visited the City's website last year viewing 13.4 million pages and this number is growing by 14% every year.

Website Services include:

311: An e-services application allows citizens to request services (submit tickets) online. The city is now offering smart phone applications to report problems such as infrastructure, graffiti, or code enforcement issues. Photographs and GPS coordinates are captured and sent via the phone. Through application integration, work orders are automatically created and assigned to crews. As crews complete their work status updates flow back to the CRM system allowing residents to track their requests. A common services orientated architecture is used to process both web and mobile requests for service.

Seizing our Destiny is an important strategic initiative and plan for the city. A website was launched to provide details about the initiative and progress on its milestones. Each Strategic Route has many members from public and private organizations that collaborate on an administrative portal. Their data entry is published out to the public website. (http://seizingourdestiny.com).

The city proactively **alerts** its citizens of new or updated information such as meeting notices, agendas, and special events through an email subscription service provided by GovDelivery. Users can subscribe to 150 email and wireless alerts. Almost **8.9 million notifications** were delivered to 173,261 subscribers in the past year.

The city has adopted **social media technologies**. Riverside has 28 groups, channels, and feeds at Facebook, Twitter, YouTube, and LinkedIn. Facebook, Twitter, and LinkedIn groups have over 10,600 followers combined and the YouTube channels boast 138 videos and 68,300 views. Social media postings attempt to tie back to city web resources where possible, creating synergistic effects.

Riverside's **mobile website**, http://riversideca.gov/mobile, is tested with iPhone, Android, and Blackberry browsers for compatibility.

The City website now uses **1024x768** resolution and a **dynamic navigation system** for very fast access to important links and information.

Web pages are designed with the user in mind. Related services are grouped together regardless of the departmental structure. For example, the "About Riverside" page has groupings of links for subjects like "Living in Riverside" and "Traffic & Transportation".

The city continuously enhances **website accessibility**. Extensive use of text-based links and limited use of graphics to convey information enable assistive technologies to easily traverse the website.

Transactions containing **confidential information** are processed through secure socket layer (SSL/TLS) technologies. Access to this information is strictly limited to authorized personnel. Website data stored on database servers are behind an additional firewall, further decreasing the likelihood of data theft.

A security service from Jaal, LLC scans and protects the website from code-injection and cross-site scripting (XSS) vulnerabilities.

Links to the city's website privacy policy, accessibility policy and website disclaimer appear in page footers. These policies express, in plain language, the city's commitment to electronic privacy, the purpose of website traffic logs, and protections for children or minors who use the website.

Many online forms and services are available from the **Online Services page**, saving tax-payers time and money. The police online crime reporting system, registration for parks activities, red light citation payments, vendor registration and on-line bids, and parking citation payments system are a few examples of Mayor Loveridge's vision of a "**virtual city hall**".

To reduce paper use and fuel costs (to deliver council packets), council members were issued **iPads**. Agendas and all attached reports are uploaded to 'the cloud' (dropbox.com) and are then synchronized to the iPads by the council members. They utilize the iPad as a reader and mark their feedback on agenda items and reports.

Electric, water, and trash customers now have the option to receive e-bills versus paper bills. This reduces costs and provides a convenient bill paying experience for customers. Within two years 6,568 (5.8%) of 112,000 customers use e-bills, saving approximately **$106,000 annually**. Over the last 12 months **316,006 online payments** have been processed.

Library patrons can now pay their fines and fees online using the SmartPay system. In less than one year on the web, it has received thousands in payments, with an **ROI of 22.5**%. Additionally, the system allows library branches to process credit card payments. **Credit cards were not accepted prior to this now 20% of all in-branch payments are now made with credit cards**.

Riverside has a new feature to allow **electronic comments on City Council agenda items**. This provides reports to elected officials to make better decisions.

Through the electronic posting of materials, newsletters, agendas and minutes, Riverside has seen a significant decrease in copy costs and postage expenses. As more Citizens get online costs will be further reduced.

Employee recruitment and 'onboarding' processes are now **completely web-based**. Potential employees apply online. After job interviews, a candidate is awarded the position. They receive email notification to complete their personnel record. They then login and enter their name and address, W-4 withholdings, beneficiaries, direct deposit information, and more. They are required to review fifteen policy documents. Once submitted, Human Resources department schedules a follow-up meeting to issue a badge and verify their work eligibility. The job candidate's data then routes to the financial system (payroll) and groups in Finance, Workers Compensation, and Safety.

The City of Riverside partners with more than 30 third-party vendors to deliver **dynamic web content** to its citizens. Some of these include:

- Coplogic (online property crime reports)
- Dell (discounted computers for low income households)
- eBay (reselling technology for SmartRiverside's Digital Inclusion Program)
- eCompliance (hazardous material business emergency plans)
- Facebook (city events information)
- Google (site search, grant for marketing SmartRiverside's E-Waste Collection)
- GovDelivery (digital subscription service)
- Granicus (live broadcast of City Council meetings, live TV channel on web)
- HP (discounted computers for low income households)
- Innovative Interfaces (online library catalog)
- Kubra (online bill payment)
- LaserFiche (document archive and agenda creation)
- LinkedIn (Riverside and SmartRiverside Forums)
- Microsoft (Digital Inclusion Literacy Program for curriculum for Digital Inclusion)
- NeoGov (city jobs server)
- OnmiPlatform (credit card processing through enterprise payment gateway)
- PayPal (online Payment acceptance)
- PetData (pet licensing)
- PlanetBids (bid opportunities management)
- Questor (ARGUS image archive server)
- RecWare (recreations activities registration)
- Turbo Data Systems (pticket.com, online parking citation payment)
- Twitter (micro-blogging)
- Useablenet (accessible web pages)
- US Internet Corp. (free WiFi for city residents)
- Xerox (Website Development)
- YouTube (hosted Riverside videos)

5.9 Digital Inclusion

The IT Department is committed to supporting the SmartRiverside Digital Inclusion Program.
Riverside's low income families do not normally have the available resources to take advantage of new
technologies that can assist in improving their education and overall quality of life. To help bridge this
"digital divide" the City of Riverside offers one of the best digital inclusion programs available in the U.S.
through its affiliation with SmartRiverside, a non-profit community member of the United Way.
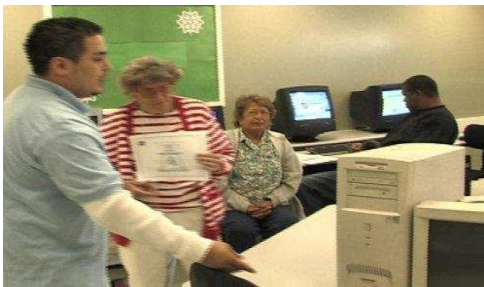
Smart Riverside's digital inclusion program donates 200 computers equipped with Microsoft Office
Software and wireless access devices to low income families in Riverside every month. Recipients can
access and use the City's unique free wireless network that covers most of the 55 square mile developed
area of the City or qualify for low income high speed broadband through Charter Communications.

This program is made possible through donations of computers, monitors and other electronic equipment
by large local firms, educational institutions and the public; The IT Department's annual fundraising golf
tournament; collection and reimbursement for "e-waste"; eBay sales of items with residual value, and
Inland Empire Technology week.

Digital Inclusion Staff is comprised of full-time information technology professionals and part time
employees provided through the Riverside Project Bridge program. Project Bridge (Building Resources for
the Intervention and Deterrence of Gang Engagement) is a gang prevention, intervention, and
suppression program, the goal of which is to reduce the incidence of youth gang violence, gang
membership and gang related activities in the City of Riverside. The program provides various services to
participants between the ages of 12 and 22. Project Bridge management works closely with the City's
Parks, Recreation and Community Services Department, IT and Xerox in providing work opportunities
for participants.

5.10 Operational Efficiency

The IT Department leadership team has one of the finest reputations in local government. They are active in the community, participate in leadership rolls for industry organizations, have strong partnership relationships with many of the leading technology corporations and have expert knowledge of City of Riverside business and application processes.

The IT Department has deployed an "Industry Best Practices" Project Management and Department Alignment Methodology in order to efficiently team with city departments and rapidly deliver high quality, integrated solutions on time and within budget.

The IT Department has selected Xerox as its outsourcing partner. Xerox is the leading outsourcing company in the Public Sector, has highly skilled resources that are experienced in city government, is client driven, service delivery focused and has the capability to rapidly adapt resources to meet the City's evolving demands.

The IT department has accrued demand for more than 200 IT projects. A majority of them are requests to help improve City department business processes and operational efficiency. Projects are prioritized based on departmental priority and then assigned a citywide priority by the Executive Technology Committee which directs existing resources in the IT department without increased costs to departments.
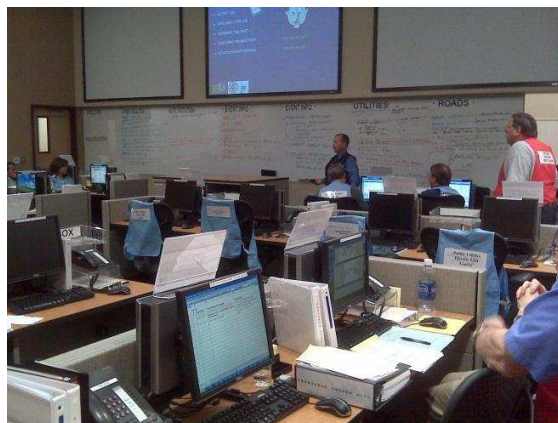
Tony Coletta at the Emergency Operations/Backup Data Center

Major Projects

Working Together with the Same Goals in Mind

Section 6.0 – Major Projects

Aligning with departments to enhance citizen services

IT is partnering with City Departments to deliver technology based solutions that will enhance Riverside's reputation as the economic and cultural center of the Inland Empire and one of America's best places to live, work and enjoy.

Major IT projects are identified in this section by department. The departments are listed in alphabetical order. For each department we have included a brief description of their mission, some of the ways they are using technology today, what you will find on their website and their plans for implementing new solutions this fiscal year.

Last year the City of Riverside IT Department delivered more than 50 projects. The Department is currently tracking 250 IT projects and 100 are mentioned in this section. All projects are documented in the IT department's PlanIT project management system which is available on the internet.

City of Riverside Airport

Welcome to the Future of Corporate Aviation in Southern California

Riverside Airport is one of the largest corporate airports in Southern California. In fact, Riverside Airport compares in size to John Wayne Airport in Orange County with un-congested airspace and easy departures to Arizona, Las Vegas, Mexico and the Western United States.

The Airport is tower-controlled and has complete landing and navigation systems for all-weather conditions, full conference and catering facilities as well as every level of pilot and aircraft service.

The Airport is connected to City Hall via high-speed communication lines and free wireless for access to Riverside's many on-line services, activities, restaurants and points of interest.

The airport uses technology for airport operations, communications, property management, new facilities design, research, client services coordination, video security, and for managing our annual air-show that brings in 70,000 spectators.

Visit the Riverside Municipal Airport website at http://www.riversideca.gov/airport/ for information about flight and fuel services, car rentals, rules and regulations, runways and acreage, ground access, useful phone numbers, the weather, the airshow, airport master plan, the airport commission and more.

Riverside Airport IT projects include:

Project	Initiative (s)	Description
Fiber & WiFi communications	Infrastructure, e-Government	High speed communications for advanced video, voice, data & applications.
Video Security	Operational Efficiency, Integration, security	Expand camera system to improve function, coverage, and integration with other city departments.
Contract Management System	Operational Efficiency,	Evaluate automated solutions for hanger and land lease contracts.
Phone System Replacement - VOIP	Operational Efficiency	Begin evaluating alternatives to improve function, performance and support.

City Attorney's Office

The City Attorney's Office provides legal representation and services for the City Council, City officers, and City employees in order that they may lawfully attain City goals and outcomes without undue risk to the City. This Office approves the form of all contracts, bonds and certificates of insurance, prepares ordinances & resolutions and acts as General Counsel to the Redevelopment Agency.

Office priorities include litigation required to protect City revenue sources, enhance neighborhood livability, and address criminal activity. To maximize efficiency in support of these and other activities, the City Attorney's Office has implemented Citylaw's Litigation Tracking Solution.

The City Attorney has a very close working relationship with all departments, is actively engaged on-site with police in emergency situations, is a key sponsor of the City's highly regarded Graffiti Abatement and Video Security Solutions and regularly collaborates with departments regarding new high technology services for Riverside citizens.

The City Attorney's website provides information about the department, where to get legal help, and a history of the departments 100 years of service. Site visitors will also find comprehensive information about the City's Municipal Code including City Charter, Administration & Personnel, Revenue & Finance, Licenses & Regulations, Health & Sanitation, Noise Control, Building & Construction, Zoning, Cultural Resources, and much more.

The City Attorney site provides links to the Riverside County Bar Association's Lawyer Referral Service, Inland Counties Legal Aid Services and the Riverside County District Attorney's Office. Visit the City Attorney website at http://www.riversideca.gov/attorney/default.asp.

The City Attorney's Website Linking Policy communicates rules for posting non-City information and links on Riverside's Internet site.

The City Attorney, Police, and Public Works use Riverside's "model" computer based Graffiti Tracking System to quickly clean, pursue and prosecute.
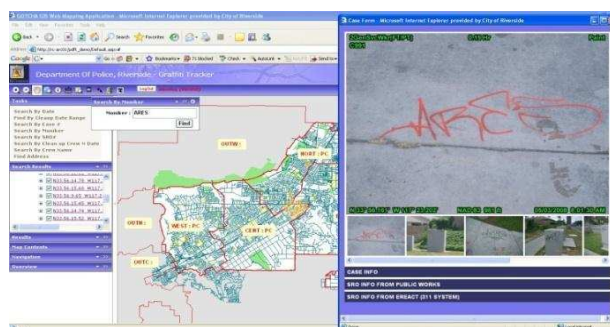
City Attorney IT projects include:

Project	Initiative (s)	Description
Contract & Records Management Systems	Operational Efficiency, Integration	Collaborate with Parks, Finance, City Clerk and HR on IT projects being evaluated to improve staff productivity.
Wireless Video Security Cameras	Operational Efficiency, Integration, WiFi	Collaboration with departments on the use of low cost wireless and fiber based video security cameras for vehicles, parks, intersections, railroad crossings, targeted crime areas and facilities throughout the City.
Technology upgrade	Operational Efficiency, Standards	Enhance PCs to provide increased performance and support for word processing software

City Clerk's Office

The City Clerk is responsible for elections, historical records, board & commission applications, the city charter, the municipal code, conflict of interest statements, accepting legal claims, certifying copies of official records, administering Mayor and Council oaths and affirmations and is Secretary to Redevelopment Successor Agency.

This Department provides the public with easy access to a large amount of information. By visiting the City Clerk website anyone can view records, reports, agendas, minutes, meeting schedules, attendance, bylaws, and more. Website visitors can also view live and archived council meeting webcasts, initiate correspondence, link to citywide services and learn how to apply for volunteer boards & commissions. Visit the City Clerk website at http://www.riversideca.gov/city_clerk/default.asp.

The City Clerk's office has implemented a solution to provide public internet access to the municipal code, another that displays map based (GIS) election results on mobile devices, and they have become a national reference for LaserFiche Document Management. Technology focus this year is on census driven redistricting, expanding the amount of election information available online, automating boards and commissions processes, and implementing new agenda management software.

Search the Municipal Code here:
http://www.riversideca.gov/municode
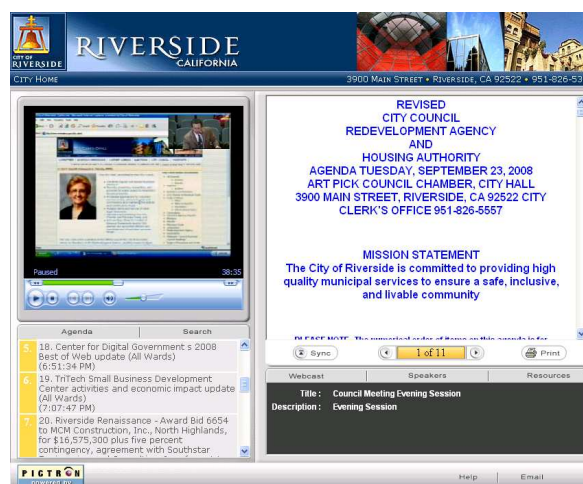
City Clerk IT projects include:

Election Links

Project	Initiative (s)	Description
Contract Validation System	Operational Efficiency	The City Clerk is collaborating with the Finance Department on an insurance and contract validation system.
Laserfiche records management enhancement	Operational Efficiency	The City Clerk is required to destroy documents that are eligible for destruction. This upgrade will automate the process of removing electronic documents as the paper copies are destroyed.
Redistricting Project	Operational Efficiency	Every time a new census is conducted, districts, precincts or wards must all be reconsidered in light of demographic changes. The City will use ESRI's Districting application and SCAG's GIS data from the 2010 Census.

City Manager

The City Manager, appointed by the City Council, is the chief administrative officer of the City. He enforces the laws and carries out the policies of the Council through the control and direction of City Departments. The **City Manager** makes recommendations to the Council on legislation, fiscal matters, capital improvements and other City policies. It is through the City Manager's leadership that the City has embarked on the most ambitious economic development programs in Riverside's history.

SEIZING OUR DESTINY - "Our goal is to improve quality of life, attract diverse and dynamic people, encourage innovation and work together for the common good": The resounding message from the City's 2012 quality of life Index (*info@SeizingOurDestiny.com*) is that Riversiders are uniformly happy with their overall quality of life and the City's commitment to environmental protection, green leadership, education and technology. "I've lived in many places. Seizing Our Destiny is the single best plan I've seen for community revitalization. It is changing the course of the community for the better." Kevin McCarthy, President/CEO, United Way of the Inland Valleys.

Catalyst for Innovation: Newsweek recognized Riverside's progressive policies recently by naming us as the third highest "Can-Do City in the U.S." (Newsweek, Sept. 19, 2011) in an issue devoted to how to move the country forward. With citywide wireless connectivity, universal access to computers, one of the top 10 websites in the US and a growing number of innovative technology driven solutions, we have become a leading technology hotbed.

High Technology is engrained throughout Riverside Programs. The City Manager chairs the Executive Technology Committee (ETC). At the ETC, Department Directors and the Chief Information Officer review priorities and ensure technology is aligned appropriately with departmental programs and renaissance projects.

City of Awards
http://www.riversideca.gov/awards.asp

The City Manager Website provides information and links regarding City operations, how the City uses internal auditing to ensure services and programs are as efficient and effective as possible and how citizens can communicate concerns online regarding City policy, public safety, legal and other issues. Visit the City Manager website at *http://www.riversideca.gov/manager/*

Last year the City Manager's office completed website projects to capture the festival of lights experience in video and showcase economic development progress in the community.

The Festival of lights is the City's signature holiday celebration. Check it out!
http://www.riversideca.gov/arts/fol.asp

This year the City Manager is sponsoring new board and commission websites; supporting the rollout of smartphone applications; and prioritizing a host of exciting new projects that will augment city services including the enhanced map based property information system, GIS integration for the traffic management center, and in car computer systems for public safety. Additional City Manager sponsored projects are shown on page 6.26.

Community Development Department

Riverside's Community Development Department (CDD) takes great pride in its friendly, highly responsive, knowledgeable customer service and is committed to helping residents and property owners complete building projects quickly while protecting and enhancing the City's natural and manmade environment.

CDD's Building & Safety, Code Enforcement, Planning, and Historic Resources websites are full of helpful advice, how-to information, forms, codes, project examples and incentive programs that can help improve projects, enhance our city and save owners money. Online users can pay citations, report violations, click to see lists of contractors, lookup properties, and get planning and permit information with CityRIVERSIDEWeblink

Visit the Community Development website at http://www.riversideca.gov/cdd/.

CDD uses of technology include an easy to use map based (GIS) property information system, an integrated permit system and multiple on-line citizen friendly maps. CDD also uses technology to track and manage historical resources and is continuously evaluating new ways to use technology so citizens can do more transactions on-line, save money and conduct business on site instead of at City Hall.

| Permit processing | Property Lookup | Historic Preservation | Code Violations (Zoom and take a look) | Code Enforcement |

Last year CDD enhanced their permit system to allow applicants to defer mandatory payments until permit issuance; implemented Agenda Manager to improve meeting processes, printing, and customer satisfaction; and integrated the code enforcement system with 311 to improve efficiency, service request tracking and status reporting.

CDD plans include web based City and public access electronic dashboards, wireless on-site inspections, GIS driven online permit processing with error free address validation, and mobile worker real time access to building conditions, violations, shut offs, pictures, and project status.

Smart Home Infrastructure Programs

CDD IT projects include:

Project	Initiative (s)	Description
Enhanced Property Profiler	Operational Efficiency, e-Government, Integration	Enhancements to the web and map based GIS solution used by the public and front counter employees to view property and related property information for land use planning & zoning, permit processing, and code enforcement.
Wireless inspections	Wireless, Operational Efficiency	Wireless solution to enable inspectors to enter status on site using a PDA or WiFi Toughbook.
Data Warehouse Permit Reporting	Operational Efficiency, Integration	Enhanced report generation using data from multiple disparate databases to view information from all types of permits, sorted as needed, with conditions for approval and project status information.
Online Permit Processing	e-Government	Web based solution to enable remote permit processing.
Planning Case Tracking	Operational Efficiency	System enhancements to provide tracking of planning projects.

Development Department

The Development Department focuses on improving low and moderate-income communities, helping citizens secure quality housing, revitalizing neighborhoods, preventing foreclosures, providing down payment assistance, and eliminating homelessness. They create jobs, improve infrastructure, stimulate private investment, and provides leadership in implementing the City's "Seizing our Destiny" Strategic Plan.

The Department annually recognizes residents and neighborhood groups for their outstanding commitment, accomplishment, creativity and resourcefulness in community development. Their partnerships with SmartRiverside and the City Manager's Economic Development Division has helped earn Riverside high ranking among the Nation's best cities for use of digital technologies and California cities for both economic development and redevelopment programs.

Visit the information rich Development Department website for information about development projects, the neighborhood leadership academy, affordable housing, and the Riverside one-stop multi-service campus for homeless services. The site provides links to rental properties, homes for sale, neighborhood information and a map of historic districts and buildings. http://www.riversideca.gov/devdept/.

Development uses technology to provide residents and community groups with a linked neighborhood map, an online neighborhood registration process, an organizing toolkit, property viewer, legislator contacts, CDBG grant information, email updates and a variety of videos and links to useful information.
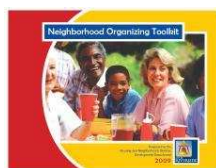
| Neighborhood Toolkit | Vision for the City's future | Fox Performing Arts Center |

Priorities include:

Project	Initiative (s)	Description
Explore Riverside with smartphones (mobile app)	e-Government, Wireless Computing,	Promote Riverside businesses, attractions and events through mobile media (i-phone and android smartphones). Integrate information available through explore riverside.
Website Rebranding	e-Government, Integration, Operational Efficiency	Establish a "Housing and Neighborhoods Development" portal with a common look & feel, community links and easy citizen access to housing authority, neighborhoods, successor agency and real property services.

Fire Department

The City of Riverside Fire Department responds to and mitigates fires, traffic accidents, medical aids, and other types of emergencies so that the citizens and visitors of Riverside may be able to survive these unexpected tragedies. Additionally they strive to minimize damage to personal property and the environment. They work to provide the public with timely basic and advanced life support when necessary in order to provide the best possible care to the injured and ill. Every year Fire personnel respond to an average of 26,000 calls. Their Operations personnel and resources are housed in 14 strategically located fire stations, divided into two battalions.

The department provides a reliable, up-to-date source of educational and practical information to both fire personnel and the public. The Fire Prevention Bureau currently enforces California Fire, Building, Electrical, Mechanical and Plumbing Codes in addition to N.F.P.A. Standards and Public Safety Code. The Riverside Fire Department issues 20,000 special event permits every year.

The Department's highly trained workforce is committed to community education and emergency services programs, the progressive use of technology and modern equipment and being fiscally responsible.

The Fire Department website has a large amount of educational information regarding fire prevention, emergency planning, earthquakes, storms, hazardous materials, bees, and heat & cold conditions. The site also has interesting photos, Fire Department history, a newsletter and the annual report. *Visit the Fire website at* http://www.riversideca.gov/fire/.

Last year, the Fire Department successfully implemented a regional records system for emergency medical service (EMS) data entry, a system to track premise inspections and billings and added public access to the EOC web based crisis information management site. Mobile Data Computers (MDCs) provide Fire units the ability to access department and City resources wirelessly, including through the internet using the City's WiFi network. Fire has high-speed network access at all stations using City fiber.

Major technology projects this year include expanding the use of mobile broadband technology in fire units; expanding the sharing capabilities of the crisis information management website, a new records management system, upgrading the fire network alerting system, improving billing and collection mechanisms for premise inspections, and increase the Fire Department's Public Information capabilities via their web site.

Riverside Fire Department major projects include:

Project	Initiative (s)	Description
Fire Public Information Site	Operational Efficiency, Integration	An e-alert subscription service to Fire media links and a web page displaying the most current incident information
WebEOC Fusion	Integration	Allow other WebEOC agencies to integrate with Riverside's WebEOC system
Fire RMS Report Verification	Operational Efficiency	Implement a method to ensure Battalion Chiefs verify and review reports.
Use of remote/wireless systems	Operational Efficiency	Provides local access to system resources for activities such as Fire premise inspections.
Computer Aided Dispatch Upgrade	Operational Efficiency	Upgrade of the system to provide improved public safety dispatch system functionality
Upgrade Westnet system	Operational Efficiency	Upgrade to improve performance and availability
Aviation Downlink	Operational efficiency	Implement a standardized method for feeding video from aviation units of inland law enforcement agencies
Upgrade of RMS system	Operational efficiency	Provide a more fire-centric system to improve Fire's ability to analyze incident information

Finance

The City of Riverside Finance Division manages the City's revenues, expenditures, investments, purchasing, accounting, budgeting, and debt. They are also responsible for billing, collection, cash and risk management.

Finance leverages technology in a number of ways to conduct City business and account for an overall budget of almost $1 billion. Their website is full of useful information, forms and links to sources and uses of funds, the city's budget, how to do business with the City, business license & startup tips, workers compensation and more. Visit the Finance website at http://www.riversideca.gov/finance/.

The Purchasing Division is a national leader in the use of internet technology. Purchasing provides online registration, opportunity searches, paperless bidding, bid results and helpful information on what the City buys, how it buys and how companies can review their competitiveness.

Bid Opportunities: http://www.activebidder.com/bid-listings

The Finance Division has implemented a citywide electronic change order solution that significantly improves productivity and delivery times by allowing departments to process PO change orders online, re-engineered accounts payable and receivables processes with enhanced automation, enabled internet access for employee information, upgraded Surado CRM to improve business tax and collection case tracking, and implemented a citywide procurement card solution so departments can make routine purchases quickly without the need to generate costly POs and expense claims. Renew your business license: https://businesstax.riversideca.gov/renewal.

Mary Balian, Art torres, JC Cortez, Mike McNutt, Carol Carr, Ynise Peoples, and David Dewey

Finance technology priorities include: Financial reports: http://www.riversideca.gov/finance/cafr

Project	Initiative (s)	Description
Accela Wireless for Business Tax	Wi-Fi, Operational Efficiency	Wireless connectivity will give business inspectors in the field real time access to the City's business tax system.
Oracle Migration	Standards, Integration	Migrate the IFAS (bi-Tech) financial system from Informix to Oracle for improved function and integration with other systems.
Team Budget by Questica	Operational Efficiency, Standards	Replace excel solution with new web-based budget system that enables operating and capital budgeting, multiple concurrent users, flexible report generation, consolidated department budgets, and analytics.
Laserfiche	Operational Efficiency, Integration	Evaluate Payroll, A/P, Purchasing, Business Tax, and Accounting for processes that can be converted to a digital/scanning solution to save money, space and time.

General Services Department

The General Services Department is responsible for the City's Property Management, Fleet Management, Building Maintenance, Publishing Services, and Mail Support for every City Department in all 133 facilities.

General Services is an environmentally conscious green department and has earned recognition from the SCAQMD for innovation and excellence in helping develop the region's hydrogen vehicle clean air program, from Government Fleet Magazine for having one of the 100 Best Fleets in the Country, from the National Institute for Automotive Service Excellence as a "Blue Shield Shop" for the Fleet Management Division maintaining more than 70% expert level certifications, and from MarCom, AVA and Pegasus for excellence in marketing and communications for the City's Government TV program.

General Services is High Tech!
(Scott Brosious, Daniel Rivera, Tina Herrera, Oscar Aquino, and Chris Davidson editing council meeting videos)

General Service's Advanced Video and Image Studio located in the City Council Chamber provides viewers interested in City services with full motion video of council proceedings, coverage of major events and activities, live broadcasting of the Festival of Lights and a host of informative news stories about City of Riverside services. They also integrate productions from Riverside Today, the Press-Enterprise and a host of media sources.

General services video productions are an entertaining and news-providing highlight of the City's award winning internet site. They regularly collaborate with the IT Department web services team. Their creations can be seen on almost every City web page. All clips provided on the charter cable and AT&T U-Verse stations are posted online for view on demand on the City internet pages and are also loaded on YouTube.

The 7th floor Grier Pavilion was designed as an outdoor theater to encourage public access to City Hall and is a perfect place for special events. General services built in portable computer kiosks and large screen monitors so visitors can view historical and other information in this unique setting with panoramic views of the City.

The department implemented the Honeywell Badge Access system so it can be controlled over the internet. This system controls physical access to doors in city facilities. The system is located in the secure enterprise data center and has full backup and UPS system connectivity for improved availability and to ensure buildings are accessible during power outages. They have also provided IT with a generator to enhance availability of all enterprise applications. General Services has installed high definition **"Big Screen" technology** in every department and in the lobby cafe. These are being used to show council proceedings, news events, City activities, vendor presentations, application demonstrations, to educate employees and to highlight City services.

General Service's future plans include implementation of an electric vehicle infrastructure; inventory, auto parts and print management systems, an electronic decision and metadata dashboard for managing and improving energy efficiency in City facilities; and upgrading to an easy to use web-based fleet management solution to reduce costs, improve operations, accommodate standard pricing and services, and increase vehicle utilization.

Major General Services IT projects are included on page 6-26.

Human Resources

The City of Riverside offers some of **THE BEST JOBS and benefits** available. Where else could you live within an hour of beach, mountain and desert communities; in the heart of one of Southern California's economic and cultural centers; choose from dozens of career paths; and retire with a lifestyle that is among the most enjoyable anywhere.

Riverside has been recognized as one of America's Most Livable Cities by the Partners for Livable Communities (a national non-profit organization) based on attractive places to live, work, play, visit, retire, raise a family, attend a university, grow a business, and enjoy diversity criteria. Visit the HR department and you are immediately greeted by smiling friendly faces, a team of highly skilled experts, an HR support structure that is second to none and technology everywhere.

Human Resources is a customer service focused, technology driven, "green" department. They use technology to run their business and to introduce people to HR services. The Department leverages their PC learning center for demonstrations, tests and training; and the Library's computer based visitor center for online job searches, application submissions and links to useful information.

The HR website is loaded with job, benefit, compensation, health, policy, training, career development and community information. Visitors can find job openings, internships, volunteer opportunities, forms, health plans, retirement information, organization charts, and maps to points of interest. There are also dozens of easy to use links to all kinds of information about living and working in Riverside. Visit the HR website at http://www.riversideca.gov/human/.

Welcome to the City of Riverside Online Employment center

The HR Department places very high priority on paperless technology based process enhancements and easy to use online self-service in order to conduct business as efficiently as possible while helping achieve City financial goals.

Recent exciting HR implementations include a Wiki site for use as a forum to exchange ideas, share content and collaborate; significantly expanded employee benefits online capabilities; and new websites for employee orientation, awards, wellness, retiree benefits, summer work experience (SWEP) participants, and the Personnel/Payroll Committee. The Department has also transformed a large number of key documents into easy to use, interactive PDF fill-able forms and created online reporting/tracking systems for personnel actions, live scans, and workplace training.

The HR Technology vision includes comprehensive web based solutions for automating and managing the entire hiring and employment process and for planning, delivering, and managing online, virtual and classroom courses.

Major Human Resources IT projects include: **SOAR**

Project	Initiative (s)	Description
Automated Personnel Transactions	Operational Efficiency, Commitment to Green	Implement additional phases of web-based automated Personnel Action process, including online processing of promotions and transfers.
Employee On-boarding	Operational Efficiency, Integration, Commitment to Green	On–boarding expedites the hiring process by integrating on-line applications with HR processes and automating the many HR forms required to complete the hiring process.
Deferred Compensation Online Enrollments	Operational Efficiency, integration, Commitment to Green	Provide a "one-stop" enrollment process by giving employees the ability to enroll and submit account changes through the provider's website. Successful implementation of this option will more effectively employ HR Staff resources, reduce administration error, and diminish benefits paperwork.
Employee and Labor Relations Web Page	e-Government, Operational Efficiency	Develop an Employee and Labor Relations web page that lists and provides general information.
IFAS version 7.9 Upgrade	Operational Efficiency, Integration	HR, Finance, and IT staff are working collaboratively to upgrade from our current IFAS 7.7 system to the new completely web based IFAS 7.9.
Life Insurance Beneficiary Tracking System	Operational Efficiency, Commitment to Green	Automate the record keeping of employee beneficiary information for each benefit in which a beneficiary must be designated.
M3P Online Course Registration	Operational Efficiency, Commitment to Green	Helps to facilitate the creation and registration process for M3P training courses, as well as, streamlines tasks for administering training programs.
P1 Tracking System	Operational Efficiency, Commitment to Green	Implement an online Personnel Requisition (P1) Tracking system.
Volunteer/Intern Timesheet	e-Government, operational efficiency, Commitment to Green	Create an intuitive and configurable web based timesheet application where volunteers/interns can easily and securely enter and track their volunteer hours online.

Training • Wellness • Articles • Benefits • Jobs • Compensation • Recognition • Volunteering

Riverside Public Library

The mission of the Riverside Public Library is to circulate books and other library resources, promote personal competency in seeking and evaluating information and present quality programs in a welcoming environment to the residents of the City of Riverside so that they may become productive participants in the literate society.

The library supports the circulation of a collection of 1.2 million magazine and book items to over 180,000 active borrowers. The library's eight locations provide more than 500 public access computers enabling socio disadvantaged residents computer and internet access.

The Riverside Public Library strives to be a leader and innovator technologically providing one-on-one internet homework assistance, online manuals, multi-media databases and a small business resource center. Its website receives 1.5 million page visits each year and its cybrary program is a Helen Putnam and Digital Steppingstone Award winner.

The library, with help from the IT department operations and network divisions and the Information Technology Active Domain Administrators, created a domain structure to improve control, maintenance, response times and availability for the PC's used by the public. Access the library online at http://www.riversideca.gov/library/.

Public safety, as well as the safety of staff and collections is a high priority. Library, IT and Public Safety have the ability to view the various camera shots live and review archived digital recordings providing an added level of security.

The Smart Money Manager enables library patrons to pay library fines and fees with a credit card, either in person, at one of the automatic payment machines or via the Internet through an e-commerce module.

The Library team has added a computer lab for public use, enhanced their website to improve content and make it easier for visitors to access books and other materials, and e-books for web, tablet, e-reader and smartphone formats.

Major IT projects include:

Project	Initiative (s)	Description
Millennium Library System to Linux	Operational Cost Savings	Migrate Millennium Library system to virtual server environment. This will improve performance, availability and support.
Public Active Directory	Operational Efficiency	Enable technical staff to make necessary upgrades, patches and fixes via network tools.
Point of Sale	Operational Efficiency	Automated solution for payment of fines will eliminate the need for cashiers at all library locations. This will enable customer self-service payments at the library or elsewhere using the Internet.

Office of the Mayor

Mayor Ron Loveridge is the official spokesman for the City. His role is to reach out to members of the community, encourage agreement and good will at City Hall, and represent the City on intergovernmental matters. He has been Riverside's Mayor since 1994, served on City Council from 1979 to 1994, is a past President of the National League of Cities and Chairman of SmartRiverside. He has a Master's Degree and Ph.D. in Political Science from Stanford University and has been a professor at the University of California, Riverside since 1965.

Mayor Kicks off IE Tech Week   Awarding Hi Tech Incentives   Kicking off Solar Initiative

Riverside is an emerging hub of high technology. "The Intelligent Community Forum (ICF) offers perhaps the highest marker of Riverside's emergence as a best city. In 2012, for the second year in a row, we were selected as a Top Seven Intelligent Community of the Year. Over 435 cities applied. The ICF has a very sophisticated jury system. The point -- Riverside is now competitive with the best cities in the world!" – 2012 State of the City.

The City's solar initiative, SC-RISE, is a talent and technology ecosystem and innovation incubator that, with partnerships in Japan, China and Germany, has become an exemplar of a broadband economy organization.

"As Chairman of SmartRiverside I take special pride in the success of its Digital Inclusion Program. Over 5,000 computers have now been given, with training, to low income families. I know of no other city in the country with such a successful program to "equalize" information and opportunity." *http://www.smartriverside.com/.*

The Mayor's website is designed to identify policy initiatives and to highlight success stories for Riverside, the City of Arts and Innovation. The site has information about the popular Mayor's Night Out "Traveling Town Hall" Program, At Home in Riverside, Fit, Fresh & Fun Forum, Riverside Youth Council, Clean and Green Riverside, Top 25 Restaurants, Trail Guides, International Relations and much more: *http://www.riversideca.gov/mayor/*

The mayor is committed to finding new ways of encouraging public access to City Hall. Outside his office is the Grier Pavilion. The Pavilion is open to the public, has panoramic views of the City and is a terrific site for a special event. Technology is built into the Pavilion. Computer kiosks and 3 high-definition "Big Screen TV's display historical and other information about the City in this unique outside setting.

The Mayor has challenged IT to leverage new "social networking" Internet technologies. Over 25 million professionals already use these tools to connect with colleagues, exchange information, and find people that can help achieve goals. Other priorities of high importance to the Mayor include projects that will utilize the citywide wireless network for improved services, systems to enhance communication with the City's 26 neighborhoods, the new completion counts education program and the City's incubation and commercialization partnerships with universities and private businesses. Additional Mayor sponsored IT initiatives are on page 6-26

 Watch our new video!   Follow the Mayor on

Riverside Metropolitan Museum

The Riverside Metropolitan Museum is a center for learning and a community museum that collects, exhibits, and interprets cultural and natural history. In a rapidly changing community, the museum provides an understanding and appreciation of our region's legacy.

The museum provides stewardship of two National Register Historic buildings and one National Historic Landmark building. Most importantly, the museum acts as caretaker for a significant artifact collection of more than 100,000 objects representing the cultural and natural history of the region. This would not be possible without the integration and maintenance of a bar coding system and database for cataloging collections.

Utilizing technology to streamline operations and enhance visitor access to museum information are departmental priorities. Visit the Museum website at http://www.riversideca.gov/museum/ for teacher, student and researcher resources related to the cultural and natural history of the Riverside community.

The Museum's NAGPRA (Native American Graves Protection and Repatriation Act) website is a password protected website for the Curator of Anthropology to facilitate virtual consultation with a large number of tribal entities located throughout the U.S. This application will allow the Museum to comply with pending Federal legislation regarding NAGPRA online access.

Arts and Cultural Affairs: The Museum team ingrains technology in all their programs to provide easy online access to an abundance of information about the Fox Performing Arts Center, Filming in Riverside, Festival of Lights, Downtown Farmers Market, Things to Do, Special Event, Public Art and much more.

Museum IT projects include:

Project	Initiative (s)	Description
Citizen Science Nature Spotter	e-Government, Operational Efficiency, Integration	Collaboration with IT, Park and Rec, ESRI, and numerous GIS volunteers for Sycamore Canyon Park to enable visitors to take smartphone photos of plants, bugs, animals, etc. and discover information about them in real time.
Museum Virtual Exhibit	e-Government, Operational Efficiency	This project will create photo and virtual tours of exhibits. The first project is a virtual photographic tour of the Harada House "Reading the Walls" exhibit.
GIS Day	Integration, e-Government, WiFi	Host the City's GIS day for hundreds of residents and children. This IT project shows how the City uses integrated map based technology to improve the productivity of all departments in delivering citizen services. The program is also intended to generate excitement about the museum and GIS technology.

Parks, Recreation and
Community Services Department

The Parks, Recreation and Community Services Department provides innovative recreational experiences and social enrichment opportunities for people of all ages and cultures in a variety of safe and attractive parks, landscapes and facilities. These are beautiful places for after school fun, a family picnic, learning about computers, having a business meeting, enjoying friends, taking a class, going for a swim and a myriad of other activities.

This Department has been improving and modernizing parks as part of the City of Riverside Modernization Program and they are investing in technology to make the parks excellent centers for learning. They have also provided a public transportation solution to help get citizens to and from the parks, a reservation system so the facilities people want are available when they need them and video security to help keep the parks safe.

The Parks website is full of information, pictures, maps and videos about activities, events and learning opportunities: http://www.riversideca.gov/park_rec/.

Activity Guide

Check out all of this season's activities!

Community Center Computer Labs / Learning Centers: Computer labs are available for use to assist with homework, Internet access, tutoring, and much more. The centers have high-speed fiber communications for very fast computer access.

The Community Centers also use the computer labs to train low income families. Upon completion of an 8 to 10 hour class, families are given wireless computers with Microsoft software as part of the SmartRiverside program that is helping the City bridge the digital divide.

51 parks, 14 community centers, 7 pools, and evening lighting

Ball field lighting is controlled remotely using a "state of the art" solution from Musco. This energy efficient system has improved user satisfaction and significantly increased staff productivity. The Department has automated thousands of drawings for safekeeping and easy access, enhanced their Recware facility reservation and Routematch software programs and added low cost wireless security cameras in the parks. This year focus includes improved services, energy & cost efficiencies, advanced programs and increased facility usage.

Get the latest events and activities news from us!

twitter

Parks, Recreation and Community Services IT projects include

Project	Initiative (s)	Description
Video Security	Operational Efficiency	Provide for secure and safe environments at parks and community centers using the high speed fiber network.
Auto Attendant & Recorder Phone System	Operational Efficiency	Install and set up a new auto attendant & call recorder phone system for Special Transit's mini bus system to improve scheduling and customer service
Recware enhancements	Operational Efficiency	Migrate to a web based solution with functional improvements to the facility reservation system.
Fiber	Operational Efficiency	High speed communications for advanced video, voice and data applications.

Riverside Police Department

The Riverside Police Department (RPD) provides the services necessary to ensure public safety as well as a wide array of proactive community based policing and problem-solving services that have earned them the reputation as a best practices model organization.

In 2011 RPD created the Community Services Bureau (CSB) to strengthen the relationship between the community and the police department and help achieve a safer and more livable city. CSB's Citizen Academy provides community members with an inside look at how their police department runs its day-to-day operations and encourages them to participate in a police-community partnership.

The Department promotes a commitment to excellence, continued education, technology advancements and the ongoing development of comprehensive data collection programs.

The Police Department is leveraging high technology in patrol cars, neighborhood stations, training facilities, mobile command centers, dispatch, crime labs, administrative offices, in partnership with city departments, through links to State and Federal Agencies and to continuously be in touch with citizens.

Police priorities include targeted enforcement, traffic safety and flow, graffiti prevention, enhanced records management, improved field based reporting and efficient process flow within the department.

Technology implementations in support of these priorities include in-car video cameras for patrol vehicles; enhanced mobile broadband communications for high speed access to the City network and other internet applications; video security cameras for targeted crime areas; integration of the Police administration system with the City's HR application; digital workflow enabling the training division to electronically receive, route and track all training requests; system integration so officers can immediately relay information on suspicious activity to the Intelligence Unit; a central storage repository that simplifies management of secure police data; an Automated License Plate Video Security System; and automated access to documents for the Community Police Review Commission.

RPD's website is robust. At the site you can report a crime or traffic problem, get crime statistics for property you're thinking of buying or renting, access the Megan's Law database, view map based property information, apply for a job, review volunteer opportunities, pay for a parking ticket, get answers to a host of frequently asked questions, find resources, and communicate with the Chief. The site also has the latest police news, press releases, a message from the Chief and a whole lot more. Visit the RPD website at *http://www.riversideca.gov/rpd/.*

Major Technology Projects this year include: providing reliable voice interoperability to inland public safety agencies (Riverside City, Riverside County, Ontario, San Bernardino City, San Bernardino County, Corona and the CHP); installing a video downlink system for inland agency aviation units; expanding the use of mobile broadband technology in police units; upgrading the existing CAD system to the vendor's latest version; implementation of a workflow solution for internal investigations tracking; a new records management system; and developing interfaces to and from existing police applications with other systems inside and outside the City.

Major RPD IT projects include:

Project	Initiative (s)	Description
Radio Interoperability Project	Infrastructure, Operational Efficiency, Integration	Implement a cost-effective solution that provides a robust link between inland agency radio systems.
Dispatch Center Move	Operational Efficiency, Infrastructure	Move the dispatch center from its current aging location to a new state of the art facility.
Aviation Downlink	Operational Efficiency, infrastructure; Integration	Development of a standardized method for feeding video from aviation units of inland law enforcement agencies
Computer Aided Dispatch Upgrade	Operational Efficiency	Upgrade of the system to provide improved public safety dispatch system functionality
Records Management System	Infrastructure, Operational Efficiency, Integration	Replace aging RMS system with a new solution that provides improved functionality, reliability and cost effectiveness
LaserFiche Imaging System Upgrade	Operational Efficiency	Upgrade of the system to provide improved imaging system functionality utilizing workflow capabilities of the imaging system
Automated Internal Affairs investigation process	Operational Efficiency	Improve internal process for initiating and tracking internal investigation.
Integration of false alarm billing system with other City systems	Operational Efficiency, Integration	The Cry Wolf system tracks RPD response to false alarms in the City. Integration with Finance system will reduce duplicate data and effort.
Provide all MDCs with 3G card access	Operational Efficiency	Allow all Police units the ability to access dept and City resources wirelessly including the internet.
Access to RUSD video security cameras	WiFi, Operational Efficiency, Integration	Ability to see situations at RUSD facilities from the City's network.
Access to regional data warehouses of crime information	Operational Efficiency, Integration	Provides ability to access and share data with other regional agencies.
Upgrade of servers and storage systems	Infrastructure, Operational Efficiency, Security, Integration	Provide for new data storage system to allow for effective and secure storage of data.
PD Application Dashboard	Operational Efficiency	Develop a central application that provides access to all the various applications that are available for PD use.
Graffiti Tracking System – new smartphone application	Operational Efficiency	Increase the functionality of the current method to capture photos of graffiti and upload them to the GAT system
Data Center Environmental Monitoring	Operational Efficiency	Install environmental sensors and controls to the Magnolia data center and add them to the central monitoring system for all City data centers
Police Vehicle Inventory	Operational Efficiency	Inventory all communications and data equipment in PD units to improve support and maintenance activities
Field Based Reporting	Operational Efficiency, Integration	Implement Field Based Reporting (FBR) for the Police Dept that will provide for a single method for officers to complete their police reports and automatically upload them to RMS
RPD Foundation Website	E-Government, Operational Efficiency	Creation of a website for the Riverside Police Foundation charity. This website will be used to provide information about the foundation and to promote it within the community.
IBIS Wand Reader	Operational Efficiency	Enable law enforcement to quickly scan fingerprints in the field.

nixle Join NIXLE and stay updated

Receive trusted messages and public safety alerts directly from the Riverside Police Department via text message or email. There is no cost and you decide where the messages go. Sign up at www.nixle.com.

Riverside Public Utilities

Riverside Public Utility (RPU) is delivering high quality reliable electric and water service, exceptional customer care and very low rates to our residents and businesses.

RPU has been recognized with the APPA Reliable Public Power Designation and Platinum Award, named among the Top 10 U.S. Solar Utilities and as a State leader in the use of renewable resources (Green Power). It's Water Theater Program has been viewed by more than 1 million students and has received the National Freedom Foundation Award for community service.

311 Call Center (826-5311) Non-Emergency City Services

On January 30, 2012, a routine report of graffiti that city crews quickly remove – turned out to be the 311 center's one millionth call. RPU's innovative and convenient center handles phone, online and smartphone requests 24 hours, 7 days per week. The 311 contact center receives more than 200,000 calls and 20,000 smart phone and email requests each year. Residents rave about the simplicity of "doing business" with the city. It is one of the things that makes Riverside one of the most intelligent cities and great places to live and work.

RPU places very high priority on using technology to continuously improve operations and customer service. Their web-site has many helpful links to rebate and incentive programs; billing, payment and turn-on services; annual reports; public meeting schedules; home and business energy calculators; conservation tips and more. Visit the RPU website at http://www.riversideca.gov/utilities/.

RPU has implemented several technology projects including WaterTrax for water quality lab test result reporting, AppWorks automation to improve nightly Utility Billing (CIS/Banner) batch processing efficiency, Dynamic Reporting for integrated IFAS (finance) & SPL (work order) information, Internet/VPN access to Riverside's Market Power Exchange application for the City of Azusa, SPL workflow enhancements for asset inventory and inspections and Reverse 911 to proactively alert residents and businesses about power outages and other emergencies.

Follow RPU on

Major Technology Projects underway include new GIS, VOIP, budget, analytics and customer information systems as well as enhancement to video security, work flow and reporting solutions.

Best Government to Citizen Website – GreenRiverside.com

Riverside Public Utility IT projects include:

Project	Initiative (s)	Description
CIS Replacement	Operational Efficiency, Integration	Replace the existing Utilities Billing system to provide advanced functionality, improved customer service, integration with the existing enterprise applications and a lower cost of ownership.
CADME Replacement	Standards, Operational Efficiency, Integration	GIS migration from CADME to ESRI SDE to improve support, ease of use, functionality, and integration capability.
Portfolio Modeling System (Ascend Analytics	Operational Efficiency	Provide a decision making analytic environment for operations and credit, risk analyses, hedging analyses, acquisition evaluations, and planning studies.
New Budget Solution (Team Budget	Operational efficiency, Integration	Replace excel-based budgeting system with Team Budget from Questica for both operating and capital budgets. This enables consolidation of separately developed departmental budgets, what-if analysis, and version control. .
Remote Water Level Readings	WiFi, Operational Efficiency	Enhance field operations productivity and reduce costs by remotely monitoring water levels at designated water wells from a central site, using the city's WiFi technology
VOIP	Operational Efficiency, Integration,	Implement Avaya Voice over Internet Protocol solution for RPU and then roll out Citywide as funding becomes available.
Power Generation Control Point Reporting-Wonderware	Operational Efficiency, Integration	Purchase and install software that will generate reports based on control points at three RPU Power Generation Stations (RERC, Springs, and Clearwater).
SPL Enhancements	Operational Efficiency	Expand the use and capabilities of SPL in the areas of asset inventory management (including meters, transformers, & streetlights), work order planning and construction tracking, timekeeping accounting, and enhanced end-user reporting. Utilize MS SQL Reporting to eliminate costs for additional Crystal Reports licenses
PU Finance - Dynamic Reporting Tool	Operational Efficiency	Provide a dynamic reporting tool for PU Finance to enhance information modeling and data analysis capability for accounts receivables, consumption and charges, customer deposits, and other areas
RAC Cluster	Infrastructure, Operational Efficiency	Migrate core systems to a cluster environment to provide for growth and high availability.
RouteSmart for Field Services	Operational Efficiency	Improve meter reading, billing, collections and other processes by optimizing field service schedules and routes.
Customer Service move Flight Road	Operational efficiency	Move Orange Plaza/Customer Service to Flight Road
TRP Project	Operational Efficiency, Standards	Replace old computers that are 5-10 years old with new Dell OptiPlex 990's for Windows 7 and VOIP compatibility
Video Security-Substations	Operational Efficiency	Purchase and install the necessary infrastructure for video security at Public Utilities Substations
Forward Transaction Capture	Operational Efficiency, Integration	Forward purchase transactions for energy, natural gas and resource adequacy are tracked using an excel spreadsheet. This new system will have an interface to securely authorize/approve and lock the transactions once the deal is finalized.
Smart Grid Pilot	Operational Efficiency, e-government	Pilot 10-12,000 households with time synchronized interval data collection, two-way communications, on-demand reads and data integration with the city's billing system.

Public Works Department

The City of Riverside Public Works Department enhances the quality of life for city residents and businesses by operating and maintaining the city's streets, trees, landscape, wastewater, storm drain and refuse systems.

This department designed and implemented our City's *Advanced Traffic Management System, one of the most impressive high technology projects in Riverside.* Residents, students and organizations from all over the Country visit the Traffic Management Center (TMC) on a regular basis to see how the department uses this system to view and manage intersection and railroad crossing traffic flow and emergencies in real time.

The Public Work's Internet site provides valuable tools and information to citizens, contractors and visitors. Residents can find information about trash pickup schedules, urban forestry, weed abatement, street-sweeping schedules, recycling services, safety programs for children, bike plans, air quality initiatives and downtown parking. Contractors and engineers can easily find online survey and land records, drawings and forms, and can access information from related agencies. Visit the Public Works website at http://www.riversideca.gov/pworks/default.htm.

Public Works solutions include an integrated SCADA/SQL system for operations, regulatory reporting and analysis that collects information from numerous instruments and analyzers located throughout the Water Quality Control Plant, a parking meter system that is powered by solar antennas and processes multiple types of payments including coins and credit cards, a CRM based solid waste collection system with route optimization, and *one of the most advanced integrated Graffiti Tracking and Abatement Solutions in the U.S.* Workers remove graffiti within 24 hours, document removal costs via special digital GPS cameras and share the information with the Police Department and City Attorney for crime analysis, prosecution and offender fee collection.

This year Public works will continue to place high priority on improving citizen services by leveraging technology in every aspect of their business. Priorities include TMC integration with Caltrans for handling freeway bottlenecks; permit system enhancements; CADME (map based engineering and design) migration, asset management process improvements for street & sewer services; and SCADA (wastewater control system) analytics.

Major Public Works IT projects include:

Project	Initiative (s)	Description
Sewer – 311/SPL Service Request Interface	Operational efficiency, Integration	Create a 311/SPL service request and work order module interface for sewer assets.
TMC GIS Pilot	Operational Efficiency, Integration	Identify a Map based solution to integrate the multiple applications used in the Traffic Management Center.
Gap Analysis: Storm Water, Collections & Wastewater	Operational Efficiency	Implement a solution for automating the SWC&W asset management process.
CADME Viewer replacement pilot	Operational Efficiency	Begin the process of replacing the core map based (GIS) computer aided design and mechanical engineering solution with an Industry "Best Practices" supportable solution that is easy to use and integrates with Citywide applications.
RouteSmart optimization	Operational Efficiency	Implement RouteSmart function for street sweeping and refuse route optimization.
Security Cameras	Security, Integration	To monitor public areas for safely and to detect/act upon vandalism threats.
Website Enhancements	e-Government, Operational Efficiency	Service driven enhancement to provide information, images, videos, forms and links for residents and commercial users. Support 24 hour city hall with engineering drawings, permit info, household programs and more.
Web Content Training	E-government, Operational Efficiency	Identify and train a web content editor for public works' websites.
Automated Vehicle locator	Operational efficiency	Implement a GPS/AVL Solution for trash, street sweeping and other vehicles to enable real time vehicle location and improved response to Citizen requests for service.
Interactive Voice Response System (IVR)	Operational Efficiency, e-Government	IVR solution for inspections, encroachments, tree service & others to be defined.
GAT- Phase 2	Operational Efficiency, Integration	2nd phase of the Graffiti Application providing multiple department reports.
Permits Plus enhancements	Operational Efficiency, Integration	Functional and Integration enhancements to Permits Plus and the SPL work order management system.
SPL automation for Wastewater Division	Operational Efficiency	GIS based solution for automated asset and work order management.
Wireless Cameras	Operational Efficiency, WiFi	Low cost wireless video cameras for intersections, targeted graffiti areas and facilities throughout the City.

City Manager and Mayor Supported IT Projects that benefit all departments for include:

Project	Initiative (s)	Description
Explore Riverside with Smartphones (mobile app)	e-Government, Wireless Computing,	Promote Riverside businesses, attractions and events through mobile media (i-phone and android smartphones). Integrate information available through explore riverside.
Board & Commission Websites	Operational Efficiency, e-Government	Implement Web Portals on the City Web site for Boards and Commissions.
Citywide Free Wireless Network (WiFi)	e-Government, WiFi, Operational Efficiency	Implement new solutions for security, traffic, asset management and internet access.
Integrated GIS solutions	e-Government, WiFi, Int Operational Efficiency	Provide map based integrated solutions for property (Enhanced Property Profiler), Traffic (TMC), emergency mgmt (R911) and core City systems.
In-Vehicle Solutions	e-Government, WiFi, Int Operational Efficiency	Video security, asset tracking, code enforcement and route optimization solutions for police, fire, CDD, Public Works and Gen Services vehicles.
Single Sign-On (IFAS)	Operational Efficiency, Integration	Provide a single sign-on ID and Password that will provide easy access to all authorized City applications. This ease of use solution will enhance productivity of all users while maintaining a high level of system security.
New Generator for the IT Enterprise Datacenter	Operational Efficiency, Infrastructure	Install a generator to provide a 48 hour window for power outage recovery. This will allow ample time for IT to appropriately respond to incidents and avoid unnecessary and lengthy outages. This will significantly improve the availability of all enterprise applications.
IT Disaster Recovery Plan	Operational Efficiency	Implement disaster recovery plan for the City's Integrated Finance & Accounting (IFAS) and Customer Information Systems (Banner).
SharePoint – Eforms	Operational Efficiency, E-Government	SharePoint is a tool that is included with the Microsoft Office suite of Products. This tool provides the ability to create web portals and electronic forms quickly and easily.
Reporting Data Warehouse (IFAS, Banner, SPL, PP, all)	Integration	Enables self-service report generation from a data warehouse that has data sourced and combined from multiple database systems.
Dual ISP	Infrastructure	Dual Internet service providers (ISPs) provide the City with redundant Internet access. Primary 50 MB fiber link with 10 MB backup path.
Migrate MS Applications to MS SQL-Server	Standards	The City has standardized on SQL Server in place of Access for custom data base systems to support the departments.
Fiber to all City Facilities	Infrastructure	High speed communication for video, voice and data applications.
PBX Replacement with VoIP	Infrastructure	The City is beginning to evaluate the Voice over internet Protocol (VoIP) alternatives to replace the existing telephone system.
Website Rebrand	e-Government, Operational Efficiency, Integration	The City is implementing services oriented department portals to enhance the City's Image, provide a Citywide common look & feel, and make it easy for Citizens to access City Hall anytime from anywhere.

General Services Major Projects include:

Video Security Cameras	Operational Efficiency, WiFi, Integration, Security	Additional cameras for City facilities to improve safety
Energy Management System	Operational Efficiency, Green	Web based solution to allow staff to centrally view and manage HVAC settings for 23 facilities
General Services Website	e-Government, Operational Efficiency, Integration	The City is implementing services oriented dept portals to make it easy for Citizens to access City Hall anytime from anywhere. This site will provide General Services Department (including map based alternative fuel facility) information
Facility Management System	Operational Efficiency, Green	Automated Facility Management System to track City facilities and key equipment contained in/on these facilities to improve operations, lower maintenance costs and better plan for capital improvements.
Managed Print Services	Operational Efficiency, Commitment to Green	Implement a solution that will significantly reduce the high costs of consumables, color, single sided and overall printing.

Appendix A – City Applications

Server Applications	Description	Vendor
Access Control System	Badge Access	Honeywell
ACCESS Power Management	Building / Lighting Automation	Siemens
ACES	Energy transaction management system	SunGard / Altra
Acronis True Image	Desktop image build	Acronis
Adventix	PO Fax tool	STR Software
ANI/ALI	911 Call Exchange Switch	AT&T
Antivirus	Virus protection software	Microsoft ForeFront EndPoint Protection
Symmetra PX	Data Center UPS Power Protection	APC
Applicant Tracking (AMS 5)	Applicant Tracking	SIGMA
AppWorx	Job scheduling and business process automation software	AppWorx Corp.
ARC / GIS	GIS tools and query	ESRI
Argus Collection Management System	Museum collection management system	Questor Systems
Asset Solutions	Fleet management	Maximus
Audit Control Language (ACL)	Data analysis , audit and reporting	ACL Services
AutoCAD	Drawing software	AutoDesk
Banner CIS	Customer Information System	Ventyx / SCT
BEAST	Integrated Property and Evidence tracking system	Porter Lee Corp.
BigFix Enterprise Server	PC Power Management	BigFix
Business OpsCenter	In/Out Electronic Message Board	Audama Software, Inc.
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CAFR Software	Finance GASB34 reporting	Tyler Technologies
CAL Legal Sourcebook	Educational and reference tool for law enforcement	CopWare Corp.
Checkpoint	Network Security	Network Vigilance
CityLaw	Litigation research and case management tools	Cycom Data Systems, Inc.
Simpana	Enterprise Backup Software	CommVault Systems
Computer Aided Drawing and Mechanical Engineering (CADME)	Computer drawing and geographic mapping	Internal Development

Server Applications	Description	Vendor
CORE / One Step	Cash receipting system	Core business Technologies
Credit Card Processing	Credit card processing tool	CORE Business Technologies
Credit Cart Verification	Credit Card verification	I/C Verify
CreditWatch	Credit Card verification	Equifax
CrimeView	Crime Analysis Records Management	The Omega Group
Cry Wolf	False Alarm Billing	AOT Public Safety Corp.
Crystal Reports	Reporting Software	Business Objects
Digital Inclusion Tracking	Database to track digital inclusion families	IT Internal Dev.
Dataquick	Property / Parcel /Owner Information	DataQuick
Document Management	Document scanning and index software tools	Laserfiche
Docupresent	Bill Formatting	SkyWire Software (previously DocuCorp)
Email Delivery	Email subsystem services	GovDelivery
eReact	Customer Relationship Management	Automated Business Systems and Services (ABSS, Inc.)
Exceed	Connectivity Software	Hummingbird
Exchange	Email Administration	Microsoft
FastImage	Remittance Processing	NCR
Fastrack	Insurance Certificate Tracking	CG-One
Fire ePCR	Electronic Patient Care Report	Sansio
Fire Incidents Billing	Bills for Inspections using VisionFIRE and Permits Plus	IT Internal Dev.
Fire View	Fire Analysis	The Omega Group
FireZone	Pre-fire planning and drawing	The CadZone
FirstLogic	Address Sorting	Business Objects
Funk Software Oddysey Client	Network Access Security Solution	Accuvant (Juniper)
Geo-SCADA	SCADA Sanitation	Wonderware
GeoSmart	Mapping tools	MoosePoint Technologies
Government Business System	Cost allocation calculation system	Government Software Systems (GSS)
Granicus Legistar	Agenda Management Solution	Granicus
Granicus Video Gateway	City Council Internet Broadcasts	Granicus
Graffitti Tracking System	Grafitti tracking database	IT Internal Dev.
Human Resource Regulation Documentation	Regulation Documentation	J.J. Keller

Server Applications	Description	Vendor
IDS Workgroup	Informix Dynamic Server (IDS) mgmt tools	SunGard Bi-Tech
IFAS Employee Online	View checkstubs, W-2's, personal information, and dependent info.	SunGard Bi-Tech
Infrastructure Asset Management	Pavement and street management system	Vanderhawk Consulting LLC
Integrated Financial and Administrative Solution (IFAS)	Financial, Payroll and Human Resource System	SunGard Bi-Tech
Interactive Voice Response (IVR)	Interactive voice response (permitting)	Selectron
IT Timesheet	IT service request tracking	IT Internal Dev.
LaserCam	Red Light Photo Enforcement	RedFlex
LaserficheDocument and Records Management Version / Web Access / WorkFlow / Desktop	Imaging, document management, and Audio Storage (PD)	Compulink
Lead	Police Administration Database	Most Wanted Software
Legato	Optical scanning	Optical Laser
Lift Text Transcoder	Mobile assessibility	UsableNet
M4-Garage Management	Fleet management	Maximus
MapObjeccts	Desktop mapping and GIS tools	ESRI
Maps	National mapping query	Thomas Bros
MDC GII	In-vehicle Video	Coban
Merant Professional	Security software	Serena (Merant)
MetroScan	Map query tool	First American Real Estate
MicroFocus	Programming tool	SunGard Bi-Tech
MicroPaver	Pavement management software	American Public Works Association
Milennium	Library Cataloging, Circulation On-Line / Publ Access	Innovative Interfaces
Monarch	Electric SCADA	Open Systems International
MV90Xi	Internal load data collecting system	Itron, Inc.
MVRS	Electric and Water Meter Reading	Itron, Inc.
NetMotion Mobility XE	Secure remote access tools	NetMotion Wireless
NetPro Mgmt Suite	Security and compliance tools	NetPro
NiceVision Alto	Digital and audio Recording	Nice Systems
OmniCast 4.0	Video Surveillance Camera Management and Archiving	Insight Video Net

Server Applications	Description	Vendor
One-Step	Cashiering	Core Business Technologies
Outlook	Email Manager	Microsoft
Parking Meter	Parking meter citations	Ventek
PastPerfect Museum Software	Museum Collections Management	PastPerfect Software
PBX	City-wide telephone switch (VoIP)	Avaya
PBX - 911	Multi-storage location information	Teledyne
PC Charge	Credit Card verification	ChargePC.com
Permits Plus	Permits / Business Tax Processing	Accela Inc.
Pierpoint	Sanitation Pipeline Video	Piplelogix
Portfolio Modeling System	Risk analyses, hedging analysis, acquisition e evaluations, etc	Ascend Analytics
Primavera for Public Sector	High-end, complex project management tools	Primavera Systems, Inc
PrintTrakCAD/PMDC	Computer Aided Dispatch – Police, Fire and PU – Hosted	Motorola
Property Profiler	Property information	IT internal dev.
SettleCore	Energy Transaction Settlement Solution	Power Settlements
Siebel CRM	CRM for 311 call center	Siebel
Threat Management Gateway	Internal and Reverse Proxy	Microsoft
Q Publishing	Web page and publishing tool	Quantum Art
QuicNet/4	Traffic management software	McCain Inc.
Rennaisance	Worker's Compensation	David Systems
RouteSmart	Routing software	RouteSmartTechnologies
Safari	Parks and Recreation Class Registration and Facility Reservations	RecWare
SCADA	Sanitation / Water monitoring	ABB Spider
Secure Site Pro	Secured site seal and program certificates	Verisign
Serena PVCS Professional	Software configuration management tools	Serena Software Inc.
Server Express	Performance tools for high-volumee transaction processing	Microfocus
SharePoint	Web portal and work flow software	Microsoft
Skyline Commercial	Property and Lease Management	SS&C
SmartNet	Network monitoring tools	Cisco

Server Applications	Description	Vendor
SPL Work Order and Asset Management	Work Order and Asset Management Tracking	Oracle / SPL World Group
SQL Diagnostics Mgr	SQL performance monitoring software	BB Technologies
SQL Reporting Services	Reporting tools for SQL	Microsoft
StormWatch	Intrusion detection software	Okena / Cisco
Surado CRM	Contact relationship management and tracking	Surado
Synergix	Engineering scanning module for engineering printing	Xerox
Systems Center Configuration Manager	Application Deployment and Inventory	Microsoft
VisionFIRE	Fire Records Management	VisionAir
VisionRMS	Police Records Management	VisionAir
VMWare	Virtual machine management	EMC
Warehouse Building Data Quality	Data warehouse tools	DLT Solutions, Inc
WebServer	Web tools for financial system	SunGard BiTech
WISE IP Platform Software	IP tools	NCR
XP-SWMM	Hydraulic modeling software	Wade & Assoc. (CH2MHill)